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# TRANSPORTATION IN CANADA 2001

ANNUAL REPORT



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# TRANSPORTATION IN CANADA 2001

## ANNUAL REPORT



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IN CANADA 2001  
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Minister of Transport



Ministre des Transports

Ottawa, Canada K1A 0N5

Her Excellency the Right Honourable Adrienne Clarkson, C.C., C.M.M., C.D.  
Governor General of Canada  
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K1A 0A1

Excellency:

It is with great pleasure that I submit for your attention, the sixth Annual Report on the state of transportation in Canada. This report is produced in conformity with the statutory requirements spelled out in Section 52 of the *Canada Transportation Act*.

For a country of Canada's size, transportation plays a fundamental role. Transportation supports and enables both social and economic activities. The report clearly shows the importance of this role and the state of the transportation sector through the analysis of the most recent information available on Canada's transportation system.

This report and the five previous ones provide a good understanding of trends and challenges influencing the evolution of transportation needs, including those emanating from socio-economic demands, changes in market conditions, and the resulting challenges for our country's transportation system. The report is a guide to understanding the efficiency of our transportation system in the context of new logistical forces at play which constantly increase the demands Canadians place on transportation.

At a time when we are contemplating the challenges and pressures the country's transportation system will face in the coming years, this report helps to solidify the information on which policy decisions will be taken.

Yours sincerely,

Hon. David M. Collenette, P.C., M.P.



Canada



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## TRANSPORTATION AND THE CANADIAN ECONOMY

- The Canadian economy slowed down in 2001, with only 1.5 per cent growth in real Gross Domestic Product. The decline in the third quarter of the year was the first since 1992.
- The US economic slowdown was a major factor in the Canadian economic slowdown. Canada's exports to the United States fell by 2.4 per cent while imports dropped by 4.6 per cent. This trade performance was despite a 4.1 per cent drop in the value of the Canadian dollar relative to the US dollar.
- The events of September 11 depressed economic activities.
- Canadian business investment fell in 2001, especially in the high-tech sector.
- After increasing at an average annual rate of four per cent over the previous five years, manufacturing output fell by 3.9 per cent in 2001.
- Consumer spending was strong, rising 2.5 per cent, but it did drop during the third quarter. Low interest rates translated into strong housing purchases.
- All major economic regions of the world faced a slowdown in economic growth.
- In 2001, transportation industries accounted for 4.1 per cent of GDP. Transportation-related final demand represented 14.9 per cent of total expenditures in the economy. Investment in transportation made up 3.1 per cent of GDP in 2001.
- In 2000, Ontario and Quebec, together, accounted for 59 per cent of all Canadian commercial transportation; Alberta and British Columbia for another 28 per cent, leaving 13 per cent for the remaining provinces and territories.

- Forty-one per cent of Canadians' personal expenditures on transportation came from residents of Ontario, 23 per cent from Quebec residents, 13 per cent from British Columbia residents, ten per cent from Alberta residents.
- The Yukon, Ontario, Alberta and British Columbia were the only regions with per capita spending on transportation above the national annual average of \$3,126.

## GOVERNMENT SPENDING ON TRANSPORTATION

- Government spending on transportation in 2000/01 remained within the \$17 to \$18 billion range observed over the previous five years. Overall, governments' transportation expenditures decreased: the federal government increased its expenditures by 0.6 per cent and local and provincial governments decreased theirs by three per cent.
- A total of \$13.6 billion of government fees and tax revenues were collected from transport users in 2000/01, an amount slightly less than the one of the previous fiscal year.
- In 2001/02, direct federal transportation expenses are expected to reach \$1.6 billion, a 16 per cent increase over the previous year. Of that total, \$520 million is expected to be spent by the Canadian Coast Guard, and \$225 million is expected to be spent on ports and airports. Federal expenditures on road and bridges are expected to rise, mainly as a result of capital expenditures on bridges.

- Federal direct subsidies are expected to total \$828 million in 2001/02, 36 per cent more than in 2000/01. In addition to an increase in VIA Rail subsidies, programs to compensate air carriers for the closure of Canadian airspace following September 11 and to improve airport security, resulted in \$189 million new expenditures.
- In 2000/01, provincial government transportation expenditures decreased by \$1.2 billion, while local government expenditures increased by \$0.7 billion. Variations in provincial expenditures over the years can be explained by exceptional payments one year that are not repeated subsequently, such as special payments to transit systems, for example.
- Federal transfers accounted for 1.2 per cent of local and territorial government spending on transportation.
- Spending on roads and highways is the most significant category of transport-related provincial/territorial expenditures, accounting for almost 100 per cent in Prince Edward Island and 58 per cent in the Northwest Territories.
- By mode, government spending on transportation in 2000/01 can be broken down as follows: 2.4 per cent for air, 5.5 per cent for marine, 1.7 per cent for rail, 13 per cent for transit systems, 74 per cent for roads, and the remaining share for overhead expenditures.
- Nineteen per cent of total reported rail accidents involved dangerous goods.
- There were 92 fatal accidents in 2001, more than in the previous year, due to an increase in fatal crossing accidents.
- In 2000, the most recent year for which motor vehicle traffic collision data are available, 2,917 fatalities resulted from motor vehicle collisions. This is the lowest level in the past 45 years. Nevertheless, the number of casualty collisions from all reportable motor vehicle collisions rose in 2000.
- The highest fatality rates in Canada occurred in Nunavut and the Yukon. Ontario, with the highest number of vehicle registrations, continued to have one of the lowest fatality rates, 1.3 fatalities per 10,000 road motor vehicles registered, the same rate as Newfoundland and Labrador.
- In 1999, 586 fatalities resulted from collisions involving commercial vehicles, compared with 557 in 1998.
- Private automobiles accounted for 53 per cent of the vehicles involved in fatal collisions. Light trucks and vans accounted for 25 per cent and the different categories of trucks, 12 per cent.
- Seat belt use for drivers of passenger cars reached a plateau of just over 90 per cent, more or less the same usage rate since 1995.
- In 2001, the downward trend in shipping accidents was interrupted, with 458 accidents reported, a two per cent increase over 2000. With 159 and 158 shipping accidents, respectively, the Maritimes/Newfoundland region and the western region had the largest proportion of the total shipping accidents.
- A total of 506 vessels were involved in shipping accidents in 2001, 54 per cent of which were Canadian fishing vessels.
- With 25 per cent of shipping accidents, grounding accidents were the most significant.
- A total of 144 shipping accidents involved Canadian commercial vessels in 2001.
- Foreign vessels involved in shipping accidents continued to decline in 2001, with only 77 vessels involved, ten per cent fewer than in 2000.
- In 2001, there were 24 fatal marine accidents, with 33 related fatalities.

## TRANSPORTATION SAFETY AND SECURITY

- All transportation modes, except road, had no change or fewer accidents in 2001 than in 2000.
- Fatalities in aviation and road transportation fell in 2001 but rose in marine and, more noticeably, in rail.
- The downward trend in transportation accident rates continued.
- Railways under federal jurisdiction reported 1,064 accidents in 2001, the same number as in 2000. Given that train-miles were higher in 2001 than in 2000, this translated into a drop in the rail accident rate.
- Non-main-track derailments and collisions accounted for 45 per cent of total rail-related accidents reported in 2001; crossing accidents for 26 per cent, main-track derailments and collisions accounted for 13 per cent; and trespasser accidents for seven per cent.
- Accidents involving passenger/commuter trains increased from 61 to 75.

- The 295 accidents involving Canadian-registered aircraft represented an eight per cent reduction from the number reported in 2000. Of that total, 58 per cent came from private/corporate/state aircraft. The total number of fatalities involving Canadian-registered aircraft in 2001 was 61, down from the 65 reported in both 1999 and 2000.
- There were more commuter aircraft accidents in 2001.
- Most commercial air accidents, 13 per cent of total air accidents, involved aircraft in the air taxi category.
- The air transport accident rate, measured in terms of number of accidents per 100,000 hours flown, dropped.
- There were 464 reportable dangerous goods accidents, fewer than in 1999 and 2000, but more than the 383 reported in 1997.
- There were no deaths attributed to transportation accidents involving dangerous goods.
- On September 11, 2001 the Canadian airspace was closed to eliminate the possibility of further terrorist acts and more than 33,000 passengers, of flights destined for US airspace, were accommodated.
- Many sectors of the transportation industry were affected by the events of September 11, with air travel and trans-border trucking affected the most.
- A substantial number of enhanced security features and precautionary measures were implemented immediately after September 11 and, as announced in the October anti-terrorism plan and in the December 2001 budget, the Government of Canada has committed \$2.2 billion to enhance aviation security, and \$1.2 billion to enhance border security and facilitate the flow of goods and people.
- As part of the *Budget Implementation Act, 2001*, the Canadian Air Transport Security Authority — a federal crown corporation reporting to the Minister of Transport — is being established. The authority will be responsible for the provision of several key aviation security services in Canada, while Transport Canada will regulate and monitor its performance.

## TRANSPORTATION — ENERGY AND ENVIRONMENT

- In 2000, transportation accounted for 34 per cent of the 7,178 petajoules of energy consumed in Canada.
- The energy price increases observed in 2000 slowed the growth rate of energy consumption, and for transportation, translated into a decline over the volume consumed in 1999.
- With a share of 74 per cent, road transportation accounts for most of the energy consumed by transportation activities. Pipelines and aviation each have a nine per cent share, followed by marine with five per cent and rail with three per cent.
- The decline in energy consumption observed within the transportation sector in 2000 came mainly from the pipeline industry. The marine transportation sector is the only other transportation sector to consume less energy in 2000. For the other transportation sectors, the increase in energy consumption was less in percentage terms than in previous years.
- By type of energy, motor and aviation gasoline represented more than half the energy consumed by the transportation sector, followed by diesel fuel with 26 per cent, and by natural gas and jet fuel, each with nine per cent.
- Energy purchases for transportation was highest in Ontario, with 35 per cent of the total. Quebec, with 18 per cent, was second, followed by British Columbia and Alberta, each at 15 per cent. The Atlantic region accounted for eight per cent of the total, Saskatchewan for five per cent and Manitoba for slightly more than three per cent.
- The price of crude oil rose sharply in 1999 and 2000 but dropped in the last part of 2001.
- In Canada, based on 1999 information, the transportation sector accounted for 36 per cent of total greenhouse gas emissions, 161.6 megatonnes of CO<sub>2</sub> equivalent.
- Road transportation accounted for almost 77 per cent of the total greenhouse emissions from transportation energy in 1999. Aviation came second with a 10.3 per cent share, while rail and marine combined accounted for less than 9.5 per cent.
- The transportation sector accounts for roughly 20 per cent of Canada's volatile organic compounds (VOC) and more than 50 per cent of its nitrogen oxides (NO<sub>x</sub>), the two main factors contributing to smog.



- Increasing population and economic growth are likely to increase demand for energy and for transportation, with resulting environmental consequences.
- Transport Canada's Sustainable Development Strategy 2001-2003, which includes seven priority challenges and 29 specific commitments for action, was tabled in Parliament in February 2001.
- Kyoto Protocol negotiators met in Bonn, Germany, and Marrakech, Morocco, and reached agreements on many details important to the ratification process, such as which sinks to recognize, how sinks credits would be counted, and an outline for a compliance regime.
- The federal government has made a commitment in its *Canada-wide Standards for Particulate Matter (PM) and Ozone* to negotiate and sign the Ozone Annex to reduce transboundary ozone emissions and to put in place a ten-year action plan for cleaner vehicles, engines and fuels.
- VIA Rail was asked in 2001 to prepare a commuter strategy for the Greater Toronto and Montreal areas to complement the transit services already in place.
- Close to \$30 million over five years has been allocated in 2001 to fund the development, integration and deployment of Intelligent Transportation Systems across Canada.
- Amendments adopted in 2001 to the *Motor Vehicle Safety Regulations* have established a safety standard for the protection of occupants in electric vehicles.
- In the December 2001 federal budget, funding was announced for the Green Municipal Enabling Fund and the Green Municipal Investment Fund to help municipalities address environmental challenges.

## TRANSPORTATION AND EMPLOYMENT

- Consistent with the downward trend in recent years, employment in the rail industry decreased by a further 5.3 per cent in 2000.
- The number of full-time employees in the bus industry increased by three per cent in 2000.
- Employment in the trucking industry increased by an average of 2.3 per cent a year between 1997 and 1999.
- Total employment in taxi and limousine services increased by a total of 19.7 per cent in 2000 and 2001, an increase that occurred mainly in Ontario, Quebec and British Columbia.
- Total average annual employment in the marine transport industry has been increasing in all regions of the country since 1999, with the most significant increases occurring in Ontario and British Columbia. The level of employment in ferry operations remained stable between 1998 and 2000.
- In 2001, the Canadian Port Authorities reported a slight decline in their employment level for the second year in a row. The St. Lawrence Seaway Management Corporation also reported a decline.
- In 2000, total employment in the Canadian air industry increased by 2.1 per cent. NAV Canada reported a 3.1 per cent increase in employment in 2001. The air industry's travel arrangement and reservation services segment also reported an increase in employment the same year. National Airports System airports, however, reported a 1.5 per cent decline in employment.
- In 2001, the number of jobs directly related to transportation within the federal administration continued the decline started in the mid-1990s.
- Average weekly earnings increased slightly in all segments of the transport industry in 2001.

## TRANSPORTATION AND TRADE

- In 1999, the value of domestic trade reached \$1,459 billion, two thirds of which was related to services, and one third to goods. Intraprovincial trade dominated domestic trade, with 87 per cent of the activity.
- In terms of volume, 471 million tonnes of traffic moved domestically in 2000: 45 per cent by rail, 43 per cent by truck and 12 per cent by marine. More than half (55 per cent) of this domestic traffic included primary products and crude materials, such as grains, iron ore, lumber, logs, potash, bauxite, coal and other non-metallic minerals.
- Ontario took part in 40 per cent of intraprovincial trade activities by value in 1999, the largest share of all the provinces. Trucking was the dominant mode of transportation for this trade, used in 55 per cent of intraprovincial activities.
- Nearly 60 per cent of the total value of interprovincial trade was related to goods. Ontario was present in eight of the top 10 interprovincial flows.
- In 2001, exports to the United States accounted for 87 per cent of Canada's total exports, while imports from the United States represented 64 per cent of Canada's total imports. Canada's trade with the United States declined, decreasing two per cent for exports and five per cent for imports. With the exception of Manitoba and the territories, all other provinces had exports to the United States that exceeded their imports.
- Daily trade between Canada and the United States totalled \$1.6 billion in 2000, \$1 billion of which was carried by trucks. In terms of value, close to two thirds of Canada's total trade with the United States in 2000 moved by truck, accounting for nearly 57 per cent of exports and 80 per cent of imports. Seventy per cent of these trucks used an Ontario border crossing. In terms of volume, pipelines carried the most trade, followed by trucks, rail and marine for exports to the United States. For imports from the United States, trucking was again dominant, followed by marine and rail.
- Trucking and air transportation were the two modes most affected by the trade reductions that resulted from the 2001 economic slowdown.
- In terms of tonnage, the marine mode was capturing over 90 per cent of the volume shipped between Canada and overseas countries and it registered an increase in 2001. In terms of value, Canada's trade in 2001 with overseas countries by air and marine declined by six per cent.

## TRANSPORTATION AND TOURISM

- In 2000, spending on tourism reached \$54.1 billion in Canada, 7.9 per cent more than in 1999. Canadians spent \$37.9 billion of this amount, while visitors from other countries spent the remainder. Transportation expenditures accounted for \$22.4 billion of tourism spending, more than half of which was spent on air travel, and one third on vehicle transportation.
- Ontario benefitted the most from spending by international visitors, followed by British Columbia, Quebec, Alberta and the Atlantic provinces.
- In 2001, record spending by foreign visitors inside Canada and reduced spending by Canadians outside of the country reduced Canada's travel deficit to \$1.3 billion.
- A total of 90.3 million international travellers crossed Canadian borders, 5.7 per cent less than in 2000.
- In international travel, only the number of Canadian travellers to countries other than the United States did not decline.
- Total Canada-US travel, in both directions, fell sharply by 6.3 per cent. This decline was likely because more than half of Canadian overnight trips usually occur as part of tourist travel, and are more likely to be affected by changes in economic conditions. The declines were the greatest in air travel.
- For same-day travel between Canada and the United States, the automobile remained the dominant mode with 96.8 per cent of Canadian trips and 92.6 per cent of American trips.
- The number of overseas visitors to Canada declined in 2001 by 7.9 per cent due to a drop in visitors from Asia and Europe. Just a few countries showed increases: China, India, South Korea and Mexico.
- Canadians increased their visits to countries other than the United States. About sixty per cent of these visits were pleasure trips, compared with about 49 per cent of overseas visitors who came to Canada on pleasure trips.
- Air transportation was the most common mode of transportation for trips to and from overseas countries, accounting for 83.4 per cent of trips by foreign visitors and almost 100 per cent of trips by Canadians.

## TRANSPORTATION INFRASTRUCTURE

- In 2001, changes in Canada's rail network were marginal, with a 0.1 per cent reduction in the total number of route-kilometres. Of the 144.5 kilometres of lines rationalized, 71 per cent were transferred. Line discontinuances occurred in Ontario, while transfers to other operators occurred in Alberta, Saskatchewan and Ontario.
- Canada's road network was over 1.4 million kilometres, 1.2 million of which were classified as local roads. The remaining 200,000 kilometres of roads were classified as freeway, primary highway, provincial highway, and other arterial roads.
- The number of trucks crossing Canada–US borders fell, dropping four per cent after nine consecutive years of growth.
- The twenty busiest border crossings accounted for 89.2 per cent of crossborder truck traffic and 83.5 per cent of crossborder traffic in general.
- At the end of 2001, 420 of the 549 public ports and public port facilities under Transport Canada's control and administration had been transferred, deproclaimed or demolished.
- Traffic on the two sections of the St. Lawrence Seaway was 41.6 million tonnes in 2001, down by nearly five million tonnes from 2000 levels. The decline came from cargoes related to the steel industry, which were down by nearly 40 per cent.
- All four Pilotage Authorities faced financial deficits at the end of 2001.
- The net expenditures of the Canadian Coast Guard increased in fiscal year 2001/02.
- At the end of 2001, Canada had a total of 264 land airports with scheduled passenger service. Financial results of 19 airport authorities for 2000 showed an average of \$15.40 of revenue generated per passenger and \$12.99 of expense incurred. In 2001, 25 airports had projects approved for funding under the Airport Capital Assistance Program.

## INDUSTRY STRUCTURE

- There were modest changes to the Canadian rail industry structure. Some shortline operators experienced financial difficulties, which resulted in the bankruptcy of Iron Road, a holding company for a number of US and Canadian shortline railways. In addition, RailAmerica E&N shortline announced at the end of 2001 that it would cease operations in 2002.
- CN completed the acquisition of the Wisconsin Central, a US-based shortline company. This acquisition will allow CN to have a firm connection for western Canada to move goods to US markets via its Fort Frances gateway. CN also acquired the Algoma Central Railway with this purchase.
- Among the mergers, acquisitions and alliances of motor carrier firms in 2001, TransForce Inc., Clarke Inc, Cabano/Kingsway Transport Inc. and Highland Transport were active Canadian carriers. TransForce Inc, Cabano/Kingsway Transport Inc. and Highland Transport were also active in the Canada–US marketplace.
- The number of trucking bankruptcies reported in 2001 was the highest in the last ten years.
- Laidlaw, a major school bus operator and the largest scheduled bus service operator in North America, filed for bankruptcy protection in both Canada and the United States to allow the company to restructure.
- The concentration trend in liner shipping continued in 2001, with the top 20 companies controlling 76 per cent of the world fleet. CP Ships acquired TMM's shares in Americana Ships and Christensen Canadian African Line.
- In the domestic marine industry, Upper Lakes Group, an operator of traditional self-propelled tug and barge operations, formed a joint venture with McAsphalt Industries to construct and operate a new tug/barge unit to carry heavy oils and asphalt products on the Great Lakes and the St. Lawrence River. Canada Steamship Lines purchased the assets of Parrish & Heimbecker's Shipping Division.
- Canada 3000 grew through merger and acquisitions of Royal Aviation and CanJet. By mid-2001, the company had become the second largest provider of domestic, transborder and other international air services in Canada, next to Air Canada. Canada 3000 declared bankruptcy in November 2001. WestJet, another competitor for Air Canada in domestic air services, grew by expanding flight frequencies, capacity and network during 2001.



- Four reports were issued in 2001 on the progress in airline restructuring that began in 1999: two by the Air Travel Complaints Commissioner and two by the Transition Observer on Airline Restructuring.

## FREIGHT TRANSPORTATION

- Both CN and CPR reported an increase in their total revenue tonne-kilometres in 2000 to reach 291 billion tonne-kilometres.
- Between 1990 and 2000, transborder for-hire truck traffic to and from the United States rose from 23.1 billion to over 80 billion tonne-kilometres, an average annual growth of 13.3 per cent.
- In 2000, domestic truck traffic represented 84.7 billion tonne-kilometres, compared with 80.2 billion tonne-kilometres for transborder traffic.
- In 2000, the Canadian Vehicle Survey estimated a total fleet of 320,000 mid-size trucks (between 4,500 and 15,000 kilograms) and 255,000 heavy trucks (over 15,000 kilograms) in Canada.
- Marine freight traffic totalled 349 million tonnes in 2000, 4.7 per cent more than in 1999. Of that total, 55.5 million tonnes came from domestic flows, 105.5 million tonnes from Canada-US traffic, and 188 million tonnes from overseas flows.
- There was no significant change in the total tonnes of air cargo that Canadian air carriers moved in 2000, compared with 1999. The total tonnage carried in 2000 was 853,110 tonnes, of which 517,741 tonnes came from domestic flows, 100,060 tonnes from Canada-US flows and the remaining 235,309 tonnes from other international flows.

## PASSENGER TRANSPORTATION

- Rail passenger traffic increased in 2000 by almost five per cent to 4.3 million passengers. VIA Rail accounted for almost 92 per cent of this traffic, while four Class II rail carriers accounted for the rest. In passenger-kilometre terms, the increase in traffic was approximately 1.2 per cent, reaching 1.61 billion passenger-kilometres. All carriers contributed to this growth.
- The passenger traffic of commuter rail passenger services offered in Vancouver, Toronto and Montreal increased by 6.8 per cent between 1999 and 2000, but declined slightly in 2001.
- The number of passengers using scheduled intercity bus services increased in 2000 by 568,000 passengers. While there are no passenger traffic data available for charter bus services, the 210.8 million bus-kilometres reported in 2000 for sightseeing/shuttle and charter services combined are indicative of an increase in passengers.
- Urban transit ridership reached 1.49 billion passengers in 2000, the highest ridership level since 1990, and a 10.4 per cent increase over the previous year.
- In 2000, the Canadian Vehicle Survey estimated a total fleet of 16.6 million cars and light trucks. Their distribution more or less followed Canada's population distribution.
- In marine transportation, international cruise ship traffic increased at three of the five major ports in 2001. Once again, Vancouver handled over one million passengers. Halifax and Quebec City reached new cruise traffic heights, but traffic was down in Montreal and Saint John.
- British Columbia Ferry Corporation carried 21.5 million passengers and 7.8 million vehicles in 2000. Marine Atlantic traffic decreased, handling 481,600 passengers and 232,800 vehicles.
- The number of domestic air passengers decreased by 1.6 per cent in 2000, but the number of transborder air passengers increased by 4.4 per cent.



## PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

- In 2000, productivity growth reached 2.4 per cent in the transportation industry, compared with 1.1 per cent in the economy.
- The transportation industry saw real-term price increases of 0.6 per cent between 1996 and 2000. This change resulted in large part from measures introduced in 2000 to offset the impact of fuel price increases that year.
- In 2000, the two continental freight railways achieved a nine per cent productivity gain, bringing their unit costs down by 5.8 per cent despite a 3.3 increase in their factor prices.
- Productivity in passenger transportation services grew by close to six per cent per year in 1999 and 2000, allowing VIA Rail's unit costs to fall sharply.
- Between 1996 and 2000, rail freight total factor productivity increased by 4.4 per cent a year on average. Over the same period, trucking achieved an average annual 1.6 per cent productivity gain, and VIA Rail achieved a 2.9 per cent annual productivity gain. The intercity bus industry achieved a 0.9 per cent gain, while the air transportation industry achieved a 0.2 per cent gain.
- In 2000, Class I rail freight carriers reported operating income increases. VIA Rail improved its revenue–cost ratio, bringing it to 48.5 per cent. Transit systems also improved their cost recovery ratio in 2000, while the intercity bus industry's ratio deteriorated. The financial performance of the air transportation industry also deteriorated in 2000. The financial challenge facing the industry was exacerbated in 2001 by the economic slowdown and the September 11 terrorist attacks.

*The 2001 annual report presents the state of transportation in Canada using the most current information available.*

The *Canada Transportation Act* (1996) has given to the Minister of Transport a statutory responsibility to table every year an annual report on the state of transportation in Canada. Section 52 of the Act gives details on the mandate behind this report:

"Each year the Minister shall, before the end of May, lay before Parliament a report briefly reviewing the state of transportation in Canada in respect of the preceding year, including:

- (a) the financial viability of each mode of transportation and its contribution to the Canadian economy and the development of the regions;
- (b) the extent to which carriers and modes of transportation were provided resources, facilities and services at public expense;
- (c) the extent to which carriers and modes of transportation received compensation, indirectly or directly, for the resources, facilities and services that were required to be provided as an imposed public duty; and
- (d) any other transportation matters the Minister considers appropriate."

This 2001 report is the sixth annual report submitted by the Minister since the *Canada Transportation Act* came into force. As with the previous reports, this one gives an overview of transportation in Canada, using the most current data and information available. Its scope is not limited to federal transportation responsibilities. However, the coverage of urban transportation matters is limited to urban transit transportation, and no coverage is made of pipelines. Nevertheless, the overview given is unique in its comprehensiveness.

Data availability limits the extent to which matters have been dealt with in the chapters which follow. Where data for 2001 was available, these chapters review transportation in Canada for that year; where such data

was not available, transportation information in the most recent year for which data was available is provided. Readers interested in longer-term perspectives on the state of transportation in Canada are invited to consult previous annual reports, all available on the Transport Canada Web site at [www.tc.gc.ca/pol/en/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts3/Transportation_Annual_Report.htm).

Because this report highlights major transportation "events" in 2001, it was important to pay some special attention to the September 11 terrorist attacks in the United States, as they had some repercussions on transportation in Canada. As a result of these tragic events, transportation security, which has always been of primary importance, became a subject of even greater scrutiny. The events of September 11 permeate numerous sections of this report. These events contributed to the slowdown in the North American economy in 2001.

The structure of this report purposely avoids having a separate chapter for each mode of transportation, as was the case for the last three reports. Instead, it covers a given subject for all modes of transportation. This structure allows the reader to readily compare and contrast modal activities and conditions, or to simply understand the linkages among modes and how events impacted across them.

Everything Canadians do relies on transportation. Natural resources have little use until they are freed by transportation; crops in remote areas have little value until non-local markets are opened up for them. Transportation opens the door to regional, national and global trade. The relationships between transportation and the economy, not to mention society as a whole, are complex, deep, numerous and varied.

Transportation, the economy and society are interdependent. The report starts with Chapter 2 which

reviews the performance of the Canadian economy, both at the national and regional levels. The economy has an important influence on the state of transportation in Canada, as large regional and sectoral variations permeate the transportation sector and contribute to differences in requirements for transportation services. Transportation is used by all sectors of the economy, and the nation's gross expenditures on transportation are significant.<sup>1</sup> Transportation faced a decline in demand, reflecting the economic conditions that prevailed during the year.

Chapter 3 shows the most recent information on government transportation spending and revenues, including the net amounts allocated by governments on transportation. It addresses a specific aspect of the Annual Report statutory mandate, outlined in Section 52 (b) of the *Canada Transportation Act*. When reading this chapter, it is important to remember that transportation is not a homogeneous system and that it is only partly planned and controlled by governments. That is, expenditures on and investments in transportation are also made by the private sector.

The chapters which follow deal with a number of key subjects — including safety and security, energy and environment, employment, trade and tourism.

The safety and security chapter is particularly important, as it deals with Canadians' concerns with the transportation system particularly since September 11. Societal concern about the environment has also become more pronounced. The chapter on environment and energy informs and presents trends that are relevant to these two closely interrelated subjects. But the environmental concerns related to transportation presented here go beyond discussing the energy consumed by transportation activities and the resulting emissions of gases. It covers other aspects of environmental quality that may be affected by transportation.

The chapter on employment assesses the importance of transportation as a source of employment in the Canadian economy and examines the question of salaries within the sector.

Transportation activities in relation to trade and tourism, which have been key drivers of growth for the Canadian economy are discussed next.

When considering trade, the emphasis is placed on freight-related activities, both in terms of flows and modal distribution. Tourism is approached with a broad brush that allows for inclusion of all passenger transportation activities tied to leisure and business, but not intra-urban activities. The tourism chapter focuses on passenger travel in relation to purposes outside usual day-to-day travel.

The next five chapters give the most recent information available on transportation. The first of these deals with transportation infrastructure, both physical infrastructure assets as well as incidental services needed for the safe and secure operation of the transportation system (e.g. air navigation system, marine pilotage services). The following three look at transport service industries from three different perspectives — industry structure, freight transportation and passenger transportation. The final chapter of this group considers price, productivity and the financial performance of transportation sectors.

Most of the data used in the analysis presented in this report came from sources external to Transport Canada. While the onus for data validation rests with the external data sources that were used, proper care and attention to data quality and limitations were ensured throughout the production of this report. Whenever data-related issues surfaced, they were brought to the attention of the sources used. But when data accuracy was confirmed, data quality was no longer challenged. Data availability and limitations constraining the analysis are flagged in footnotes within the report. Any lack of current data that surfaced during the production of the report was **not** circumvented by estimating missing data elements. The report presents the most current state of the country's transportation system, but does not attempt to develop a prospective view of the system in the coming years.

1 Due to lack of data, it was impossible to isolate the Nunavut territory this year.

# TRANSPORTATION AND THE CANADIAN ECONOMY

# 2

*Growth of the Canadian economy slowed down in 2001  
while the US economy entered a mild recession.*

To understand the factors that have affected the demand for transportation services in Canada, one must look at developments in the economy as a whole. This chapter discusses recent developments in the Canadian economy and the contribution of transportation to the economy both from the perspective of transportation industries and from the overall demand for transportation in the economy, including both commercial and private transportation.

## THE CANADIAN ECONOMY

After four consecutive years of close to four per cent annual growth, the Canadian economy slowed down in 2001. Real Gross Domestic Product (GDP) at market prices grew by only 1.5 per cent. In each of the first two quarters the economy grew at an annual rate of about one per cent, but retracted in the third quarter by 0.1 per cent. It then recovered and grew by two per cent in the fourth quarter. The decline in economic growth in the third quarter was the first since early 1992. This slowdown followed a slowdown in the US economy that started in the second half of 2000. Business investment

fell, particularly high-tech investment as shown in Figure 2-1. As the economy slowed, industrial capacity utilization fell from 86.3 per cent in the second quarter of 2000 to 80.3 per cent in the fourth quarter. The events of September 11 further depressed economic activities.

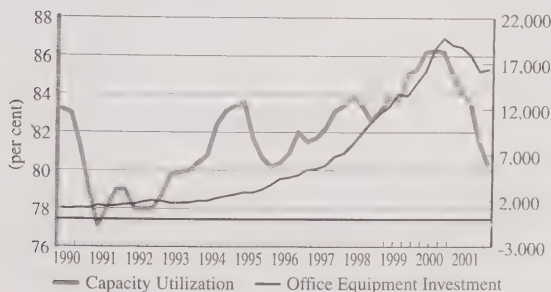
Business investment rose by 0.7 per cent in real terms in 2001, compared with an annual average of almost eight per cent between 1996 and 2000. Investment in machinery and equipment fell by 1.6 per cent, while investment in office equipment fell 5.9 per cent, a sharp

TABLE 2-1: GENERAL ECONOMIC INDICATORS

	2001	Percentage change 2000 - 2001	Annual percentage change 1995 - 2000
<b>GDP at Basic Prices</b> (millions of 1997 dollars)			
Total Economy	939,122	1.1	3.8
Goods	298,606	(2.2)	3.3
Agriculture	12,715	(10.3)	2.8
Forestry	6,217	(3.7)	3.3
Mining	37,023	2.5	2.4
Manufacturing	162,836	(3.9)	4.0
Construction	50,031	3.1	4.2
Services	640,516	2.6	3.9
Retail Trade	51,154	2.7	3.3
Transportation and Warehousing	43,539	(2.5)	3.5
<b>Merchandise Trade</b> (millions of dollars)			
Exports	412,510	(2.4)	9.8
Imports	351,003	(3.4)	9.6
<b>Income (dollars)</b>			
Personal Disposable Income per capita	21,168	3.2	2.9
<b>Canadian Dollar</b> (US cents per unit)			
	64.6	(4.1)	(1.6)
<b>Employment (thousands)</b>	15,077	1.1	2.2
<b>Population (thousands)</b>	31,082	1.0	0.9
<b>Prices</b>			
Total Economy (1997=100)	105.9	1.2	1.5
Consumer Price Index (1992=100)			
All Items	116.4	2.5	1.7
Transportation	130.8	0.0	2.9

Source: Statistics Canada, Cat. 11-010, 13-001, 15-001, 62-010; Bank of Canada

FIGURE 2-1: GOODS INDUSTRIES CAPACITY UTILIZATION,  
1990 - 2001



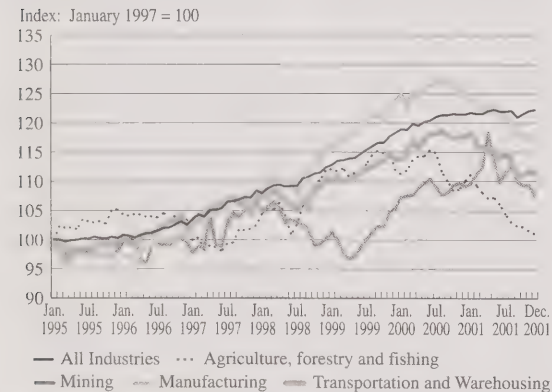
Source: Statistics Canada, CANSIM matrix 3140



reversal of the more than 40 per cent average increase over the previous five years. Consumer spending remained strong in 2001, rising 2.5 per cent over 2000 but it did drop in the third quarter, as consumer confidence fell to its lowest level since 1996. Spurred by very low interest rates, housing purchases remained strong, and real residential investment rose 4.4 per cent in 2001. Government spending on goods and services rose 2.2 per cent while government capital spending rose 6.8 per cent.

Manufacturing output fell 3.9 per cent, in contrast to the four per cent average increase of the previous five years. Mining activity increased 2.5 per cent, while agriculture activity fell 10.3 per cent and forestry activity fell 3.7 per cent. Construction activity was up 3.1 per cent. Overall production in goods-producing industries fell 2.2 per cent while service sector output rose by 2.6 per cent. Retail trade activity remained strong, increasing by 2.7 per cent. Transportation and warehousing output fell 2.5 per cent, reflecting the fall in goods production. Figure 2-2 charts the changes in the Real GDP since 1995.

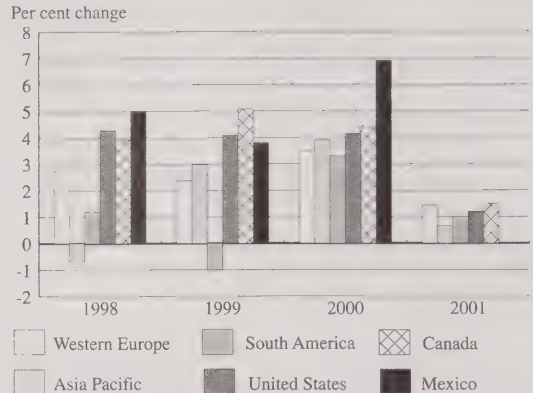
**FIGURE 2-2: REAL GDP BY MAJOR SECTOR, 1995 – 2001**



Source: Statistics Canada, Cat. 15-001

As Figure 2-3 shows, economic growth slowed in all major economic regions of the world in 2001. World economic growth is expected to be about two per cent. This is the first time that such a worldwide synchronized economic slowdown has occurred since the early 1980s. The US economy entered a mild slowdown in the second half of 2001 and only registered real growth of 1.2 per cent during the year, down sharply from the 4.1 per cent growth the previous year. The recession in Japan meant that growth in the Asia-Pacific region (including China) grew by just 0.6 per cent in 2001.

**FIGURE 2-3: REAL GDP IN CANADA AND OTHER REGIONS, 1998 – 2001**



Note: Gross Domestic Product (GDP) at market prices.

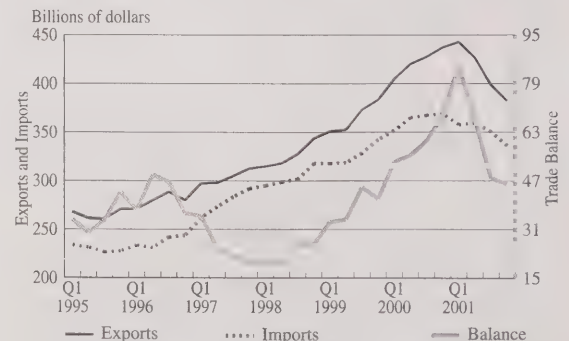
Source: Statistics Canada, Cat. 13-001, 11-010, US Department of Commerce, WEFA

Western Europe, which has been hit by high oil prices and slowing exports, grew by 1.4 per cent, down from 3.5 per cent in 2000. Latin America's real economic growth was only one per cent in 2001. This global economic slowdown has had an impact on economies relying on exports. Mexico, which is particularly dependent on exports to the United States, faced almost zero growth for 2001.

As Figure 2-4 shows, Canada's merchandise trade balance rose by \$2 billion in 2001 to \$61.5 billion, as imports (\$12.3 billion) fell more than exports (\$10 billion). This performance is in sharp contrast to average annual growth rates of 12 per cent for exports and 11 per cent for imports for the nine years since the last recession in 1991. Exports to the United States fell by 2.4 per cent, while imports from the United States fell 4.6 per cent.

**FIGURE 2-4: MERCHANDISE TRADE, 1995 – 2001**

(Quarterly, Seasonally Adjusted at Annual Rates - Balance of Payment Basis)



Source: Statistics Canada, Cat. 65-001

Exports of machinery and equipment and of automotive products fell 5.3 per cent, and forestry product exports fell 7.5 per cent. These decreases were offset by increases in energy products and in agriculture and fish products, which increased 4.5 per cent and 12.5 per cent, respectively. The drop in imports reflects the drop in machinery and equipment imports of 8.2 per cent and in automotive products of 6.3 per cent. These two categories of imports account for 55 per cent of total imports.

The average value of the Canadian dollar fell 4.1 per cent in 2001 to US\$0.646. The dollar closed the year at US\$0.628. Price increases in the economy were quite modest, as the GDP deflator (a broad indicator of prices) rose 1.2 per cent in 2001 while the Consumer Price Index (CPI) rose 2.6 per cent. Excluding the effect of energy prices and food, the CPI rose two per cent. The energy prices that consumers paid rose 3.2 per cent, a big reduction from the 16.2 per cent increase in 2000. The moderation in energy prices contributed to the fact that the average prices that consumers paid for transportation in 2001 were unchanged from 2000.

Real disposable income per capita rose 1.3 per cent in 2001, down from a 2.6 per cent increase in 2000.

The number of people employed rose 1.1 per cent in 2001, half the average increase of the previous five years. The population of Canada reached 31,082 thousand, a one per cent increase from 2000. This rate of population increase was slightly higher than the 0.9 per cent of the previous five years, a situation explained by the large number of immigrants.

## IMPORTANCE OF TRANSPORTATION TO THE CANADIAN ECONOMY

In economic terms, the importance of transportation can be measured using the system of national accounts on either an industry value-added or expenditure/demand basis.

### COMMERCIAL TRANSPORTATION

Value-added estimates are available for transportation services that are offered on a commercial or for-hire basis. Such estimates do not include transportation services that are operated by a company for its own use, such as private trucking.

Table 2-2 shows that in 2001, transportation industries accounted for \$38.5 billion, or 4.1 per cent of GDP. The trucking mode represented the largest proportion, making up 1.3 per cent of GDP, while railway transport accounted for 0.5 per cent and air transport accounted for 0.4 per cent.

**TABLE 2-2: COMMERCIAL TRANSPORTATION AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP), 2001**

Industries	(Millions of real 1997 dollars) Value-added 2001	Per cent of Gross Domestic Product
Air	4,205.2	0.4
Rail	4,901.1	0.5
Water	1,083.3	0.1
Truck	11,899.8	1.3
Urban Transit Systems	2,648.4	0.3
Interurban and Rural Bus	168.3	0.0
Miscellaneous Ground Passenger Transportation	1,770.6	0.2
Other Transportation <sup>1</sup>	11,886.6	1.3
<b>Transportation Industries</b>	<b>38,563.4</b>	<b>4.1</b>

Note: Gross Domestic Product at basic prices

<sup>1</sup> Includes scenic and sightseeing, postal and courier services as well as support activities for other modes of transportation such as baggage handling, pilotage, harbour operation and rail car loading and unloading.

Source: Statistics Canada, Cat. 15-001

## TRANSPORTATION RELATED DEMAND

GDP on an expenditure or final demand basis measures the expenditures for goods and services for final use. This includes expenditures for personal consumption, investment by both business and government, current government expenditures, as well as exports less imports. Final domestic demand excludes exports and imports, instead looking only at the expenditures made for goods and services produced within Canada. Transportation-related final and domestic demand for goods and services is shown in Table 2-3.

Overall transportation-related final demand accounted for 14.9 per cent of total expenditures in the economy in 2001, a decline of 1.5 per cent. Personal expenditures for transportation represented the largest part of transportation-related demand and accounted for 8.9 per cent of GDP. In 2001, these expenditures grew by 1.4 per cent in real terms. About 63 per cent of personal expenditures on transportation are related to motor vehicles. Transportation equipment purchases, mostly motor vehicles, made up 4.2 per cent of GDP. Other motor vehicle expenses, including maintenance and repair, fuel and licences, made up another 3.6 per cent. Personal expenditures on commercial transportation made up 1.2 per cent of total GDP. A more detailed breakdown of personal expenditures for transportation is shown in the table in Appendix 2-1.

**TABLE 2-3: TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP)**

	(Millions of real 1997 dollars) 2001	Per cent of Gross Domestic Product (GDP)	Per cent Annual Growth 2000 – 2001	Per cent Annual Growth 1995 – 2000
<b>1) Personal Expenditures on Transportation</b>	<b>91,563</b>	<b>8.9</b>	<b>1.9</b>	<b>4.9</b>
New and Used Transportation Equipment	42,968	4.2	1.6	7.6
Repair and Maintenance Expenditures	12,285	1.2	7.4	2.5
Transportation Fuels and Lubricants	16,327	1.6	2.3	1.6
Other Services Related to Transportation Equipment	8,555	0.8	2.6	2.9
Purchased Commercial Transportation	11,429	1.1	(3.5)	4.5
<b>2) Investment in Transportation</b>	<b>31,739</b>	<b>3.1</b>	<b>(8.5)</b>	<b>N/A</b>
Business Investment in Transportation	24,619	2.4	(12.4)	N/A
Transportation Infrastructure (roads and railways)	3,125	0.3	4.3	15.0
Transportation Equipment Inventories	24,362 (2,868)	2.4 (0.3)	11.0 (190.3)	11.6 N/A
Government Investment in Transportation	7,120	0.7	8.3	(2.8)
Transportation Infrastructure (roads)	6,468	0.6	7.7	(2.8)
Transportation Equipment	652	0.1	14.6	(3.2)
<b>3) Government Spending on Transportation</b>	<b>10,419</b>	<b>1.0</b>	<b>N/A</b>	<b>N/A</b>
Road Maintenance	6,159	0.6	N/A	N/A
Urban Transit Subsidies	2,433	0.2	N/A	N/A
Other Spending	1,827	0.2	N/A	N/A
<b>4) Exports</b>	<b>97,197</b>	<b>9.5</b>	<b>(6.9)</b>	<b>7.2</b>
Automotive Products	88,356	8.6	(6.8)	7.5
Commercial Transportation	8,841	0.9	(8.4)	4.8
<b>5) Imports</b>	<b>78,655</b>	<b>7.7</b>	<b>(8.4)</b>	<b>6.6</b>
Automotive Products	67,308	6.6	(8.7)	7.6
Commercial Transportation	11,347	1.1	(6.5)	1.5
<b>Total Transport Related Final Demand (1+2+3+4+5)</b>	<b>152,263</b>	<b>14.9</b>	<b>(1.5)</b>	<b>8.4</b>
<b>Gross Domestic Product at Market Prices</b>	<b>1,024,279</b>	<b>100.0</b>	<b>1.5</b>	<b>3.8</b>
Transportation Related Domestic Demand (1+2+3)	133,721	13.7	(1.8)	5.7
<b>Final Domestic Demand</b>	<b>975,843</b>	<b>100.0</b>	<b>2.2</b>	<b>3.6</b>

Note: N/A = Not Available.

A more detailed breakdown of personal expenditures is shown in Appendix 2-1.

Source: Statistics Canada, National Income and Expenditure Accounts; Transport Canada

Investment in transportation made up 3.1 per cent of GDP in 2001. Business investment in transportation equipment makes up the largest part of investment in transportation and accounts for 2.4 per cent of GDP. Motor vehicle purchases make up 61.4 per cent of business spending on transportation equipment. In 2001, business transportation investment fell by 12.4 per cent, reflecting a reduction in automotive inventories. Expenditures for roads make up the largest part of

government spending on transportation. Road investment accounted for 0.6 per cent of GDP in 2001. For more detailed information on government transportation spending, see Chapter 3 of this report.

Automotive trade dominates transportation exports and imports. Exports of automotive equipment, including parts, accounted for 8.6 per cent of GDP, while imports of this category accounted for 6.6 per cent of GDP in 2001. Automotive exports and imports dropped sharply in 2001, falling 6.8 per cent and 8.7 per cent, respectively. Exports and imports of transportation services each accounted for about one per cent of GDP.

Transportation-related domestic demand accounted for 13.1 per cent of final domestic demand in 2001. This lower percentage than for the shared GDP reflects the importance of automotive products to Canada's external trade.

## PROVINCIAL ECONOMIC PERFORMANCE

In 2001, all provinces observed lower real growth rates than in the previous year. In 2000, only Nova Scotia had a growth rate below three per cent, while in 2001, only Alberta had a growth rate of more than three per cent (see Table 2-4). The economic slowdown in the United States resulted in a drop in exports, which particularly affected the manufacturing sector in Ontario and Quebec. Both of these provincial economies experienced negligible growth in 2001. Newfoundland's GDP growth was reduced by scaled-back production in the oil and gas sector. Prince Edward Island felt the effects of September 11 on its tourism industry, as well as the effects of a drought on its agricultural output. While the economic slowdown affected manufacturing in Nova Scotia, mineral fuel production rose, as natural gas from Sable Island came into production. New Brunswick's growth was affected by

**TABLE 2-4: PROVINCIAL ECONOMIC GROWTH**

(GDP at basic prices in 1997 dollars)

	Per cent Change 2000 – 2001 <sup>1</sup>	Per cent Change 1995 – 2000
Newfoundland	1.2	3.5
Prince Edward Island	0.2	2.7
Nova Scotia	1.4	2.6
New Brunswick	0.6	2.6
Quebec	0.1	3.2
Ontario	0.2	4.4
Manitoba	1.4	3.2
Saskatchewan	(0.8)	3.4
Alberta	3.1	4.4
British Columbia	0.6	2.6

<sup>1</sup> Forecast.

Source: Statistics Canada, Conference Board of Canada



a weak construction sector. Manitoba's diversified economy, however, allowed it to weather the slowdown with low but moderately good growth. Also in 2001, economic output dropped in Saskatchewan, reflecting falling commodity prices and low crop yields. Alberta had the highest economic growth of all provinces in 2001, despite weak oil prices and reduced demand. British Columbia's low growth was a reflection of several factors, including softwood lumber duties and the economic slowdowns in Japan and the United States.

## PROVINCIAL AND TERRITORIAL PERSONAL TRANSPORTATION SPENDING

In 2000, Canadians spent \$96.2 billion on personal transportation. Ontario residents spent 41 per cent of this amount, Quebec 23 per cent, British Columbia 13 per cent, and Alberta ten per cent.

On a per capita basis, residents of the Yukon spent on average \$3,770 on transportation in 2000, the largest amount, while the residents of Nunavut spent only \$999, the smallest amount. Of the other provinces and territories, only Ontario, Alberta and British Columbia had per capita spending on transportation above the national average of \$3,126.

On average, 16.2 per cent of total personal expenditures in Canada had to do with transportation in 2000. Personal transportation spending was most important in the Yukon, where it accounted for 17.8 per cent of total personal spending. In New Brunswick, it accounted for over 17 per cent, in Quebec, Ontario and Newfoundland over 16 per cent, in Prince Edward Island, Nova Scotia, Alberta and British Columbia over 15 per cent, and in Manitoba and Saskatchewan over 14 per cent.

Personal expenditures on transportation represented 9.6 per cent of final domestic demand in Canada in 2000. It made up about ten per cent in New Brunswick, Quebec, Ontario and British Columbia, but only 7.5 per cent in the Yukon.

Table 2-6 shows the personal expenditures on transportation by province in 2000.

## IMPORTANCE OF TRANSPORTATION TO THE PROVINCIAL ECONOMIES

### COMMERCIAL TRANSPORTATION

Table 2-5 shows provincial and territorial commercial transportation GDP in terms of its importance to Canada's total commercial transportation GDP and to individual provinces or territories. Together, Ontario and Quebec accounted for 59 per cent of all Canadian commercial transportation in 2000, while Alberta and British Columbia accounted for another 28 per cent. The remaining 13 per cent was spread among the rest of the provinces and territories. Commercial transportation is most important to New Brunswick, Manitoba and British Columbia, where it makes up more than five per cent of total provincial GDP.

TABLE 2-5: COMMERCIAL TRANSPORTATION, PROVINCES AND TERRITORIES, 2000

	Millions of 1997 Dollars	Per cent of Total Canadian Commercial Transportation	Per cent of Total Provincial/Territorial GDP
Newfoundland	504.5	1.3	4.4
Prince Edward Island	102.9	0.3	3.6
Nova Scotia	919.2	2.3	4.5
New Brunswick	961.1	2.4	5.7
Quebec	8,727.6	22.0	4.4
Ontario	14,704.7	37.0	3.8
Manitoba	1,721.6	4.3	5.7
Saskatchewan	987.3	2.5	3.4
Alberta	4,843.1	12.2	4.2
British Columbia	6,092.5	15.3	5.4
Territories	187.4	0.5	4.8
<b>Canada</b>	<b>39,751.9</b>	<b>100.0</b>	<b>4.3</b>

Note: GDP at basic prices.

Source: Statistics Canada, Cat. 15-203

TABLE 2-6: PERSONAL EXPENDITURES ON TRANSPORTATION BY PROVINCE, 2000

	Millions of Dollars 2000	Per capita Dollars	Per cent of Total Provincial Personal Expenditures	Per cent of Total Canadian Personal Transportation Expenditures	Per cent of Provincial Final Domestic Demand
Newfoundland	1,370	2,551	16.3	1.4	8.8
Prince Edward Island	345	2,502	15.3	0.4	8.9
Nova Scotia	2,585	2,746	15.6	2.7	9.0
New Brunswick	2,163	2,864	17.1	2.2	9.7
Quebec	22,050	2,989	16.8	22.9	10.2
Ontario	39,280	3,361	16.6	40.8	10.2
Manitoba	2,934	2,560	14.1	3.1	8.6
Saskatchewan	2,584	2,528	14.3	2.7	8.2
Alberta	10,008	3,326	15.8	10.4	8.3
British Columbia	12,598	3,104	15.5	13.1	9.7
Yukon	115	3,770	17.8	0.12	7.5
Northwest Territories	118	2,882	N/A	0.12	N/A
Nunavut	27	999	N/A	0.03	N/A
<b>Canada</b>	<b>96,178</b>	<b>3,126</b>	<b>16.2</b>	<b>100.0</b>	<b>9.6</b>

Source: Statistics Canada, National Income and Expenditure Accounts Division



## APPENDIX 2-1

## PERSONAL EXPENDITURES ON TRANSPORTATION, 2001

(Millions of 1997 dollars)

<i>Personal Expenditures on Transportation</i>	<i>2001</i>	<i>Per cent of Total</i>
New Motor Vehicles	17,003	18.6
Used Motor Vehicles (net)	7,084	7.7
New Trucks and Vans	13,134	14.3
Bicycles and Motorcycles	3,332	3.6
Boats, Aircraft and Accessories	2,414	2.6
<b>New and Used Transportation Equipment</b>	<b>42,967</b>	<b>46.9</b>
<b>Transportation Fuels and Lubricants</b>	<b>16,327</b>	<b>17.8</b>
Motor Vehicle Parts and Accessories	6,045	6.6
Motor Vehicle Maintenance and Repairs	6,244	6.8
<b>Repair and Maintenance Expenditures</b>	<b>12,289</b>	<b>13.4</b>
Driving Licences, Lessons and Tests	2,492	2.7
Motor Vehicle Renting	715	0.8
Auto Insurance	4,391	4.8
Bridge and Highway Tolls	262	0.3
Parking	698	0.8
<b>Other Motor Vehicle Related Services</b>	<b>8,558</b>	<b>9.3</b>
Urban Transit	1,741	1.9
Railway Transport	176	0.2
Interurban Bus	622	0.7
Air Transport	6,878	7.5
Water Transport	229	0.3
Taxis	504	0.6
Moving and Storage	607	0.7
Commissions Paid to Tour Operators	671	0.7
<b>Commercial Transportation</b>	<b>11,428</b>	<b>12.5</b>
<b>Total Personal Expenditures on Transportation</b>	<b>91,569</b>	<b>100.0</b>

Source: Statistics Canada National Income and Expenditure Accounts Division

# GOVERNMENT SPENDING ON TRANSPORTATION

# 3

*A decrease of close to \$800 million dollars in government expenditures on transportation was observed in 2000/01.*

This chapter discusses the expenditures and revenues of all levels of government on transportation, by mode. It does so within the limitations of available information. First all transportation expenditures and revenues are summarized by levels of government, then a synopsis of federal and provincial revenues from transportation users is given, followed by a detailed breakdown of expenditures by levels of government. Finally, it presents consolidated expenditures by mode.

## GOVERNMENT TRANSPORTATION EXPENDITURES

This section summarizes spending on transportation by all levels of government and their agencies. First, expenditures net of government transfers received from other levels of government are shown, as well as federal government revenues (other than fuel taxes) obtained from transportation users. The federal and provincial governments do not set aside tax revenues from transport users to fund transportation initiatives.

Table 3-1 shows that government expenditures on transportation for the past five years have ranged from \$17 billion to \$18 billion a year. In 2000/01, transportation expenditures by all levels of government decreased by \$478 million, or 2.6 per cent, from their 1999/2000 levels. Federal expenditures reversed the downward trend of previous years with a growth of \$11 million, or 0.6 per cent. Federal transport expenses in 2001/02 are expected to increase by 18.9 per cent from the previous fiscal year. Combined provincial/territorial and local expenditures decreased by \$489 million, or three per cent in 2000/01. Expenditures by local and provincial governments have showed annual increases of 3.1 per cent and 4.8 per cent, respectively, over the past four years.

**TABLE 3-1: GOVERNMENTS' TRANSPORTATION EXPENDITURES AND REVENUES, 1997/98 TO 2001/02**

	(Millions of dollars)				
	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002
Transport Canada					
Expenses	2,428	1,415	1,252	1,233	1,587
Other Federal Expenses	1,018	893	741	771	797
Provincial/Territorial <sup>1</sup> Expenses	6,988	7,995	8,876	7,660	N/A
Local <sup>2</sup> Expenses	7,143	6,858	7,501	8,228	N/A
<b>Total Transport Expenditures</b>	<b>17,578</b>	<b>17,162</b>	<b>18,370</b>	<b>17,893</b>	<b>N/A</b>
<b>Expenditures per Capita (\$)</b>	<b>131</b>	<b>106</b>	<b>148</b>	<b>138</b>	<b>N/A</b>
Transport Canada Revenues	986	658	379	354	364
Other Federal Revenues <sup>3</sup>					
Related to Transportation	40	42	46	49	48
Specific Tax Revenues <sup>4</sup> from Transport Users <sup>5</sup>	12,574	13,209	13,344	13,166	N/A

Note: N/A = Not available. More yearly data are available on Transport Canada's Web site [www.tc.gc.ca/pol/en/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts3/Transportation_Annual_Report.htm)

1 Net of federal transfers as reported by the provinces.

2 Calendar year basis; net of federal and provincial transfers.

3 Revenues from Coast Guard services and small port users.

4 Federal excise fuel taxes, and provincial motive fuel taxes and licences and fees

5 Forecast at January 31, 2002, of full year.

Source: *Main Estimates of the Government of Canada; Transport Canada, Finance Directorate, The Canadian Transportation Agency; internal reports from several agencies and federal departments; provincial/territorial departments of transportation; Statistics Canada Public Institutions Division, unpublished data*

Government fees and tax revenues from transport users reached \$13.6 billion in 2000/01, a marginal decrease of 0.2 per cent over the previous year.

## FEDERAL EXPENSES RELATED TO TRANSPORT FACILITIES AND SERVICES

The federal government provides transportation facilities and services in all modes. As Table 3-2 shows, federal government involvement is observed in airports and harbour/port operations, roads and bridges, modal policy, safety services, and services rendered by the

Canadian Coast Guard. Transport Canada also performs several multimodal activities, ranging from security and emergency preparedness services to the regulation and monitoring of the transport of dangerous goods. In 2001/02, direct federal transport expenses were forecast to reach \$1.6 billion, an increase of 16 per cent since 1999/2000, after several years of decline.

**TABLE 3-2: FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES, 1997/98 TO 2001/02**

	(Millions of dollars)				
	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002 <sup>*</sup>
Airports	186	140	123	91	77
Air Navigation Systems	-	-	-	-	-
Aircraft Services	56	64	51	70	59
Coast Guard	523	471	480	496	520
Ports and Harbours <sup>1</sup>	88	86	99	107	110
Roads and Bridges <sup>2</sup>	169	156	141	154	219
Air Safety and Policy <sup>3</sup>	113	125	142	154	219
Marine Safety and Policy	65	56	47	49	54
Road & Rail Safety and Policy <sup>4</sup>	36	40	40	39	46
Multimodal Policy and Safety <sup>5</sup>	101	106	91	91	92
Other Services <sup>6</sup>	29	32	35	35	42
Other <sup>7</sup>	103	95	96	111	118
<b>Total</b>	<b>1,470</b>	<b>1,371</b>	<b>1,347</b>	<b>1,398</b>	<b>1,556</b>

Note: More yearly data are available on Transport Canada's Web site:

[www.tc.gc.ca/pol/en/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts3/Transportation_Annual_Report.htm)

1 Includes expenses for small fishing ports by Fisheries and Oceans.

2 Includes contributions by Transport Canada to the Champlain and Jacques Cartier Bridges, and expenses by the National Capital Commission, Public Works and Government Services, Parks Canada and Indian and Northern Affairs.

3 Includes expenses of the Civil Aviation Tribunal.

4 Larger expenditures in 1997/98 and 1998/99 related to the purchase of a ferry.

5 Includes expenses for regulation and inspection of the transport of dangerous goods, and multimodal safety, policy and analysis.

6 Security and Emergency Preparedness, and Research and Development.

7 Corporate Services of Transport Canada and Canadian Transportation Agency.

8 Forecast at January 31, 2002, of full year.

Source: Transport Canada

The Canadian Coast Guard is the federal government's largest single expense in transport, with expected expenditures of \$520 million in 2001/02. The federal cost of operating federal ports and airports is expected to reach \$225 million in 2001/02. Increases in federal expenditures on road and bridges are related to capital expenditures on the Jacques Cartier and Champlain bridges in Montreal, Quebec.

## FEDERAL SUBSIDIES TO TRANSPORTATION

In 2001/02, total federal direct subsidies, grants and contributions are projected to be \$828 million, 36 per cent more than in 2000/01. The major source of increases are subsidies to VIA Rail, which rose by \$79 million, and the programs to compensate air carriers for the closure of Canadian airspace and to improve airport security after the events of September 11, which reached \$189 million. Excluding these programs, federal transfers to transport would have declined by \$16 million. Since 1997/98, total

subsidies and transfers have fallen by \$1 billion. This major reduction is a result of the cessation of payments to NAV Canada and reduced highway transfers. Table 3-3 presents more details on these subsidies.

**TABLE 3-3: DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE, 1997/98 TO 2001/02**

	(Millions of dollars)				
	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002 <sup>*</sup>
<b>Air Mode</b>					
Airport (Operation and Capital)	46.2	45.0	38.7	46.8	50.5
NAV Canada	685.8	215.8	-	-	-
Airport Assistance and					
Airport Security <sup>1</sup>	-	-	-	-	189.1
Other	15.2	3.0	1.8	1.8	1.4
<b>Total Air</b>	<b>747.2</b>	<b>263.8</b>	<b>40.5</b>	<b>48.1</b>	<b>241.0</b>
<b>Marine Mode</b>					
Marine Atlantic	91.3	29.1	114.8	38.6	36.8
Other Crown Corporations	0.7	10.4	-	-	-
Port Divestiture Fund <sup>2</sup>	4.8	6.7	22.0	45.4	22.6
Other Ferry and Coastal Services	34.5	32.0	31.8	30.8	32.5
Other <sup>3</sup>	4.2	2.1	1.4	31.6	17.8
<b>Total Marine</b>	<b>135.6</b>	<b>80.2</b>	<b>170.0</b>	<b>146.4</b>	<b>109.6</b>
<b>Rail Mode</b>					
VIA Rail	216.2	200.5	170.3	231.6	310.2
Hopper cars	19.0	21.0	20.0	18.2	16.4
Grade Crossings	7.5	7.2	7.4	7.5	7.5
Other	11.0	8.4	8.1	8.1	8.1
<b>Total Rail</b>	<b>253.7</b>	<b>237.0</b>	<b>205.8</b>	<b>265.4</b>	<b>342.2</b>
<b>Highway Modes</b>					
Transition Programs <sup>4</sup>	485.6	93.4	57.5	15.3	6.8
Highway Agreements	152.2	125.9	107.2	62.8	63.3
Infrastructure Program <sup>5</sup>	140.1	81.7	-	-	-
Fixed Link in					
Prince Edward Island	52.6	44.3	46.1	47.2	48.6
Other	9.5	9.8	18.6	20.0	15.5
<b>Total Highway Modes</b>	<b>839.9</b>	<b>355.2</b>	<b>229.3</b>	<b>145.3</b>	<b>134.2</b>
<b>Grand total</b>	<b>1,976.8</b>	<b>936.6</b>	<b>645.8</b>	<b>606.7</b>	<b>827.9</b>

Note: More details are available on Transport Canada's Web site:

[www.tc.gc.ca/pol/en/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts3/Transportation_Annual_Report.htm)

Transport related expenditures by regional development agencies have been added, retroactively from 1996/97.

1 Includes air carrier assistance of \$159 million in 2001/02.

2 Includes a payment of \$36 million to the Government of Quebec for the transfer of ferry wharves.

3 Includes a payment of \$214 million to the Hamilton Harbour Commission for the settlement of a civil litigation.

4 Offset federal programs for the elimination of the *Western Grain Transportation Act*, *Maritime Freight Rate Assistance Act*, *Atlantic Region Freight Assistance Act* programs and the Labrador ferry service buyout in 1997/98.

5 Estimates of funding of transport infrastructure program.

6 Forecast at January 31, 2002, of full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

## DISTRIBUTION OF PROVINCIAL/TERRITORIAL AND LOCAL EXPENDITURES BY PROVINCE

In 2000/01, provincial, territorial and local governments spent \$15.9 billion on transportation<sup>1</sup>. This was \$0.4 billion, or 2.4 per cent, less than in 1999/2000. Local expenditures rose by \$0.7 billion (14 per cent). Expenditures by the provinces decreased by \$1.2 billion (14 per cent), returning to the level of expenditures of 1997/98. The years 1998/99 and 1999/2000 were volatile, in particular for British Columbia, Ontario and Alberta. Exceptional payments were made in British Columbia in 1999/2000. In Ontario, large payments to transit systems in 1998/99 were followed by reduced transfers to local governments and transit authorities in 1999/2000. In Alberta, provincial expenditures rose by two thirds in 1999/2000. In the rest of the country, provincial transport expenditures have been relatively stable, averaging \$3 billion over the last three years.

Since 1997/98, transport spending by provincial and local governments has increased on average by four per cent a year. The largest relative increases were recorded in Newfoundland and Alberta. British Columbia, New Brunswick, Manitoba, the Yukon and the Northwest Territories had decreasing expenditures. In Ontario, increased spending by local governments offset the reduction of provincial expenditures.

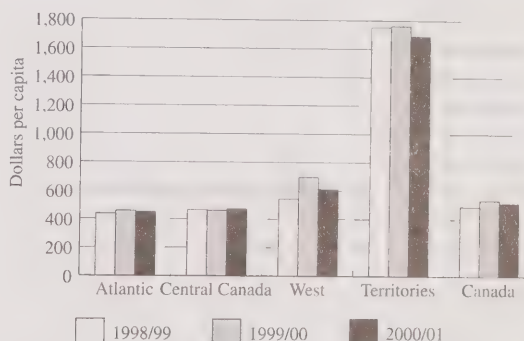
Federal transfers were equivalent to 1.2 per cent of transport spending by local and territorial governments in 2000/01. This ratio peaked at 5.1 per cent in 1997/98. In 2000/01, the Yukon was the most dependent province/territory on federal transfers, with more than 29 per cent of its transport spending dependent on federal transfers.

Spending on roads and highways is the most important category of transport-related expenditures for all provinces, although other modes are also significant for some provinces. The proportion for road and highway spending ranged from almost 100 per cent in Prince Edward Island to 58 per cent in the Northwest Territories. Remoteness makes spending on air transportation more significant for the Northwest Territories, where it accounted for 18 per cent of transport spending in 2000/01. The relative importance of air transport spending in the territories has varied from year to year, reaching as high as 33 per cent in 1997/98.

Although transit spending in Ontario has fallen by almost \$0.5 billion since 1996/97, its 18 per cent share of total transport expenditures makes it the largest transport spender of all provincial and local governments. Local governments have replaced provincial governments as the main source of public transit system expenditures, accounting for 96 per cent. Before 1999/2000, their share of transit spending was 44 per cent. Expenditures on transit are also significant in Quebec, British Columbia and Alberta.

Figure 3-1 illustrates the regional differences in transport spending across Canada from 1998/99 to 2000/01. On the one hand, the territories stand out with transport expenditures three and half times the Canadian average over this period. On the other hand, the variance between the other regions of the country is relatively small, with Atlantic Canada spending 13 per cent less than the Canadian average and the western provinces 20 per cent more. The two central Canadian provinces (Quebec and Ontario) spent nine per cent less than the Canadian average.

FIGURE 3-1: LOCAL AND PROVINCIAL EXPENDITURES PER CAPITA, 1998/99 – 2000/01



Source: Transport Canada

## TOTAL TRANSPORTATION REVENUES BY LEVEL OF GOVERNMENT

The federal government generates revenues from the use of transportation facilities and services. Revenues from cost-recovery initiatives are credited to the federal department's budget, while revenues from other sources are credited to the government's Consolidated Revenue

<sup>1</sup> Detailed data and sources are available in the Addendum to the *Transportation in Canada 2001 Annual Report* on Transport Canada's Web site: [www.tc.gc.ca/pol/en/T-Facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/T-Facts3/Transportation_Annual_Report.htm)



Fund and are not set aside to fund transportation related initiatives. Both are part of this analysis. Excise fuel taxes collected by the federal and provincial governments, as well as provincial licence and other fees, constitute revenues collected from transport users. Table 3-4 highlights government revenues from transport users from 1997/98 to 2001/02.

In 2000/01, the most recent year for which budget information is available for all government levels, government revenues collected from transport users through fuel taxes, and permit and licence fees by the federal and provincial/territorial governments, totalled

**TABLE 3-4: GOVERNMENT REVENUES FROM TRANSPORT USERS, 1997/98 TO 2001/02**

	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002 <sup>a</sup>
(Millions of dollars)					
<b>Transport Federal Revenues other than Fuel Taxes</b>					
Air Transportation Tax <sup>1</sup>	742	295	3	-	-
Airport Revenues	160	267	271	250	264
Aircraft Services	30	28	27	28	32
Other Air Fees	6	10	13	13	12
Marine Revenues <sup>2</sup>	67	67	72	77	79
Lease of Hopper Cars <sup>3</sup>	12	12	13	14	10
Other Fees and recoveries <sup>4</sup>	10	20	25	22	15
<b>Total Credited</b>	<b>1,027</b>	<b>700</b>	<b>424</b>	<b>403</b>	<b>412</b>
<b>Other Government Revenues from Transport Users</b>					
Federal Fuel Taxes	4,625	4,742	4,786	4,788	N/A
Non-Transport Use <sup>5,6</sup>	383	364	374	376	
Road Use <sup>6</sup>	4,013	4,161	4,199	4,198	N/A
Other Modes <sup>6</sup>	230	216	213	214	N/A
<b>Provincial/Territorial</b>					
Fuel Taxes	6,569	6,805	6,984	7,046	N/A
Sales Tax Equivalent <sup>6,7</sup>	630	564	663	903	
Net Road Taxes <sup>6</sup>	5,637	5,991	6,038	5,855	N/A
Other Modes <sup>6</sup>	302	251	283	287	N/A
<b>Provincial/Territorial</b>					
Licences/Fees <sup>8</sup>	2,392	2,590	2,611	2,611	N/A
<b>Total Tax Revenues from Road Users</b>	<b>12,042</b>	<b>12,742</b>	<b>12,848</b>	<b>12,665</b>	<b>N/A</b>
<b>Total: Tax Revenues from Non-Road Users</b>	<b>532</b>	<b>467</b>	<b>496</b>	<b>501</b>	<b>N/A</b>
<b>Total Tax Revenues from Transport Users</b>	<b>12,574</b>	<b>13,209</b>	<b>13,344</b>	<b>13,166</b>	<b>N/A</b>
<b>Total Tax and Fee Revenues from Transport Users</b>	<b>13,601</b>	<b>13,909</b>	<b>13,768</b>	<b>13,569</b>	<b>N/A</b>

Note: N/A = Not applicable.

More yearly data are available on Transport Canada's Web site: [www.tc.gc.ca/pole/it-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pole/it-facts3/Transportation_Annual_Report.htm)

1 Since 1996/97, the Air transport tax, formerly netted against Transport Canada budget has been credited to the Consolidated Revenue Fund.

2 Includes Coast Guard user fees and sales of marine assets credited to the Consolidated Revenue Fund.

3 Credited to the Consolidated Revenue Fund.

4 Includes inter- and intra-departmental transfers for services and various regulatory, licensing and administrative fees credited to either Transport Canada or the Consolidated Revenue Fund.

5 Estimated fuel taxes from mobile users off the public transport system.

6 Estimates by Transport Canada (revised).

7 Estimates based on the sales tax which would have applied to provincial fuel prices before provincial fuel taxes.

8 The amounts shown exclude licences and registration fees dedicated to the Société de l'Assurance Automobile du Québec.

9 Forecast at January 31, 2002, of full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

\$13.6 billion, 1.4 per cent less than in 1999/2000. By far, road fuel taxes make up the largest component of tax revenues from transportation, averaging \$10 billion, or 73 per cent of all government revenues from transport users from 1997/98 to 2000/01. Over this period, road fuel tax revenues showed the fastest average annual growth rate, 1.4 per cent, while other fuel tax revenues decreased by two per cent. Federal and provincial fees decreased by 4.1 per cent per year over this period.

In 2000/01, higher fuel prices influenced Canadians' use of personal vehicles, resulting in a slowdown in the growth of road fuel tax revenues declining by 1.8 per cent. Other fuel tax revenues increased that year by one per cent. The impact of the 25 per cent increase in road fuel prices was somewhat masked by a 5.8 per cent increase in Canadians' disposable income.

In 2001/02, federal government transportation revenues other than fuel taxes are expected to total \$412 million, up \$9 million from 2000/01. Airport revenues and leases of \$264 million are expected to account for most of this total, while marine fees are expected to bring in an additional \$79 million. Other federal revenues not credited to transport, such as the revenues from the leases of hopper cars or the sale of port assets, are also reported in Table 3-4.

## OVERVIEW OF EXPENDITURES AND REVENUES BY MODE

This section summarizes consolidated federal expenses, and expenditures by the provincial/territorial and local governments, netted of transfers received from other levels of government from 1997/98 to 2001/02. Table 3-5 shows transport expenditures and revenues by mode and level of government for this period.

Total government spending on roads has risen by about 3.4 per cent a year since 1996/97, reaching \$12.9 billion in 2000/01. Road expenditures now account for 74 per cent of overall spending on transportation.

Public funding on transit systems peaked at \$2.9 billion in 1998/99, but has since decreased to \$2.3 billion. In 2000/01, public spending on transit systems accounted for 13 per cent of all government expenditures on transportation, compared with 17 per cent in 1998/99.

In 2000/01, the air mode accounted for 2.4 per cent of gross government spending on transportation. Air-related public spending has decreased by 63 per cent since 1997/98. However, spending in 2001/02 increased by 14 per cent following the specific initiatives introduced as

**TABLE 3-5: TRANSPORT EXPENDITURES/REVENUES BY MODE AND LEVEL OF GOVERNMENT, 1997/98 TO 2001/02**

(Millions of dollars)					
	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002 <sup>1</sup>
<b>Federal O&amp;M<sup>2</sup>, Capital and Subsidies<sup>A</sup></b>					
Air	1,102	594	356	364	595
Marine	812	692	797	798	794
Rail	267	252	221	281	360
Road	1,032	536	396	323	382
Other/Overhead	234	234	223	238	253
<b>Subtotal</b>	<b>3,447</b>	<b>2,308</b>	<b>1,993</b>	<b>2,004</b>	<b>2,384</b>
<b>Provincial/Territorial/ Local<sup>B</sup></b>					
Air	76	75	62	68	N/A
Marine	92	120	1,259	177	N/A
Rail	2	2	5	20	N/A
Road	10,901	11,468	12,244	12,852	N/A
Transit	2,741	2,855	2,350	2,284	N/A
Other/Overhead	279	348	349	473	N/A
<b>Subtotal</b>	<b>14,091</b>	<b>14,868</b>	<b>16,269</b>	<b>15,875</b>	<b>N/A</b>
<b>Total Expenses: All Government Levels</b>					
Air	1,178	669	418	432	N/A
Marine	904	812	2,056	975	N/A
Rail	269	254	226	301	N/A
Road	11,933	12,005	12,640	13,176	N/A
Transit	2,741	2,855	2,350	2,284	N/A
Other/Overhead	513	582	572	711	N/A
<b>Subtotal</b>	<b>17,538</b>	<b>17,176</b>	<b>18,262</b>	<b>17,879</b>	<b>N/A</b>
<b>Government Revenues from Transport Users<sup>C</sup></b>					
Road Users	12,042	12,742	12,848	12,665	N/A
Rail, Air and Marine	1,550	1,152	904	878	N/A
Multimodal	8	14	16	17	N/A
<b>Total</b>	<b>13,601</b>	<b>13,909</b>	<b>13,768</b>	<b>13,561</b>	<b>N/A</b>

Note: N/A = Not Available.

More details are available on Transport Canada's Web site:  
[www.tc.gc.ca/pol/en/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts3/Transportation_Annual_Report.htm)

1 Forecast at January 31, 2002, of full year.

2 O&M = Operating and Maintenance.

**Sources:**

A Transport Canada; Main Estimates and Public Accounts of the federal departments concerned.

B Provincial/territorial departments of transportation. Many provinces have moved to unconditional grant to local governments. For this reason, transportation transfers may be underreported. Net expenses by local governments are only netted against transfers reported by provincial governments. Statistics Canada, Public Institutions Division; data are on a calendar year basis.

C Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation.

a result of the events of September 11. Public spending related to the marine mode increased significantly in 1999/2000, due to the transfer of the BC Ferry debt to the provincial government. In 2000/01, spending in the marine mode returned to more normal levels, around \$1 billion. The share of the marine mode in public spending on transportation reached 5.5 per cent, a level that has not changed significantly since the mid-1990s.

Public spending on rail has grown by 12 per cent since 1996/97, accounting for 1.7 per cent of gross government spending on transportation in 2000/01. More than 90 per cent of this spending is for subsidies related to rail passenger service.

In 2000/01, the federal and provincial governments spent \$1.7 billion on the air, marine and rail modes combined, while generating \$0.9 billion in fees and tax revenues from transport users.

The category "Other" in Table 3-5 includes overhead expenses by all levels of government and expenditures related to multimodal activities. Around four per cent of government transportation spending falls under this category.



# TRANSPORTATION SAFETY AND SECURITY

# 4

*The safety and security of Canada's transportation system continues to be a top priority for the federal government.*

The travelling public in Canada demands a safe and secure transportation system. For this reason, safety is one of Transport Canada's most important priorities. But Transport Canada does not shoulder this responsibility alone. All levels of government, industry, non-governmental organizations, and even the general public must share the responsibility to ensure the system is as safe and secure as possible.

Accordingly, Transport Canada works closely with all stakeholders to ensure high standards in transportation safety and, in particular, with the Transportation Safety Board and the provincial and territorial governments, to maintain nationwide system safety. Transport Canada also collaborates with foreign governments, agencies and organizations on several international safety initiatives.

In carrying out this work, Transport Canada's focus is on developing practical and effective safety programs and regulations, and ensuring compliance with its regulations and related technical standards. These programs, regulations and standards concern aeronautics and airports; air and marine navigation; marine shipping facilities; commercial shipping; new motor vehicle standards; the railways; and bridges/canals connecting provinces with each other and the United States.

This chapter describes recent trends in safety-related occurrence statistics for all modes of transportation as well as for the transportation of dangerous goods. Reports of accidents and incidents made to the Transportation Safety Board were used as the principal source of these statistics.

As a result of events of September 11 a new section at the end of this chapter focuses on transportation security. First, it discusses key roles and responsibilities related to security for all modes of transportation. It then briefly describes the immediate impact of September 11, Transport Canada's response and measures introduced. These measures include longer-term initiatives to further enhance security and ensure continued confidence in

Canada's transportation system. As noted in the introduction to this report, other chapters provide additional, sector specific information on measures and, where data is available, discuss the impact of September 11.

## TRANSPORTATION OCCURRENCES

In 2001, Canada achieved a good safety record. The aviation and marine sectors reduced the number of accidents in their sectors, while the rail sector's record remained the same. The number of accidents involving Canadian registered aircraft, in fact, represents the lowest number of accidents reported in the last 25 years. Accidents involving the transport of dangerous goods have also decreased over the last few years. Road casualty collisions, however, were up slightly from 2000 levels.

The 2001 results, concerning accidents, are tempered somewhat by the number of fatalities reported. While aviation and road fatalities were down slightly in 2001 (six per cent and two per cent, respectively, from 2000 levels), there was a small increase in the number of fatalities in marine (six per cent) and a more noticeable one in rail (13 per cent).

It is important to note that these figures do not take into account the specifics of each mode, nor do they reflect the level of activity or exposure to risk associated with each means of transportation. While these difficulties make modal comparisons somewhat hazardous, there are some noteworthy observations nonetheless.

For example, there was a marked increase in the number of aviation incidents reported to the Transportation Safety Board in 2001, even though aviation accidents were down significantly. In total, 853 incidents were reported, which represents a peak in



the statistics over the last decade. The trend did not continue into other modes, however. The number of reported rail and marine incidents were down from those reported in 2000.

Table 4-1 presents the most recent statistics on transportation occurrences by mode with comparisons to the previous five-year averages.

**TABLE 4-1: TRANSPORTATION OCCURRENCES BY MODE, 2001 VERSUS PREVIOUS FIVE-YEAR AVERAGE**

	Aviation	Marine	Rail	Road <sup>1</sup>
Accidents				
2001	295	517	1,064	158,528
Five-year Average	349	587	1,138	156,698
Fatalities				
2001	61	33	98	2,917
Five-year Average	73	31	104	3,082
Incidents				
2001	853	239	321	N/A
Five-year Average	717	176	401	N/A

<sup>1</sup> Road occurrence statistics relate to 2000 and 1995 – 1999, which are the most recent statistics available, and are based on 2000 Canadian Motor Vehicle Traffic Collision Statistics – TP 3322. Road accidents are casualty collisions, which exclude collisions in which only property is damaged.

Source: Transport Canada, based on Transportation Safety Board data

It is also important to note that accident rates for 2001 attempt to take into account the level of activity in each mode. With this consideration in mind, the numbers continue to exhibit a general downward trend, with decreases being registered in each of the aviation, rail and marine modes. It should also be noted that for the first time, the motor vehicle accident rate uses vehicle-kilometres as a measure of activity.

Table 4-2 compares data, by mode, on accident rates, for 2001 with the previous five-year average.

**TABLE 4-2: ACCIDENT RATES IN TRANSPORTATION, 2001 VERSUS PREVIOUS FIVE-YEAR AVERAGE**

	Aviation <sup>1</sup>	Marine <sup>2</sup>	Rail <sup>3</sup>	Road <sup>4</sup>
Accidents				
2001	7.6	2.8	12.9	51.2
Five-year average	8.8	N/A	14.5	N/A

Note: Preliminary estimates for 2001

<sup>1</sup> Per 100,000 hours flown (Canadian registered aircraft only).

<sup>2</sup> Per 1,000 commercial vessel trips. Based on forecast traffic data for 2001.

<sup>3</sup> Per million train-miles.

<sup>4</sup> Per 100 million vehicle-kilometres (only 2000 data available).

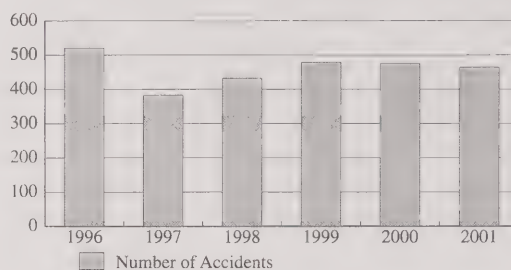
Source: Transportation Safety Board except for Marine vessel activity data which comes from Statistics Canada; Transport Canada, Road Safety

These aggregate measures of activity provide a reference point for interpreting the occurrence statistics, but each measure has its own inherent limitations. In rail, for example, the measure of train-miles captures only activities on mainline track; it does not extend to activities

in yards or on spurs and sidings. Considering that approximately half of rail occurrences take place on non-main track areas, this tends to overstate the actual accident rate. Similarly for marine, measures of vessel movements do not take into account the overall distance travelled and limit activity to vessels of greater than 15 gross registered tonnage, excluding fishing vessels. Accident rates for aviation can also vary significantly when measured in relation to flying hours, aircraft movements or number of licences.

Figure 4-1 shows the number of reportable accidents involving transportation of dangerous goods from 1996 to 2001.

**FIGURE 4-1: REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS, 1996 – 2001**



Source: Transport Canada, Dangerous Goods Accident and Information System

## RAIL

Since 1996, the federal portion of the national railway system has been decreasing steadily. In 2001, 10.5 per cent less track belonging to carriers fell under federal jurisdiction than in 1996. The statistics presented in this section include only railways under federal jurisdiction.

A total of 1,064 railway accidents were reported to the Transportation Safety Board in 2001. This equals the number reported in 2000 and is seven per cent below the five-year average. The stable number of accidents and an increase in the number of train-miles resulted in a decrease in the accident rate to 12.9 per million train-miles. The 2001 rate is well below the previous five-year average of 14.5 accidents per million train-miles. Train-miles for 2001 are estimated at 82.7 million, compared with 80.1 million for 2000.

Rail-related accidents fall into five categories: non-main-track derailments and collisions; crossing accidents; main-track derailments and collisions; trespasser accidents; and other. Of the total rail-related accidents

reported in 2001, non-main-track derailments and collisions accounted for 45 per cent, crossing accidents for 26 per cent, main-track derailments and collisions for 13 per cent, trespasser accidents for seven per cent, and other for nine per cent.

Non-main-track derailments and collisions usually involve a single car derailing in a yard at a relatively slow speed and with a low public risk. In fact, in 2001, 38 per cent of these accidents involved single non-dangerous goods cars. Dangerous goods were involved in 19 per cent of the total reported accidents.

Accidents involving passenger/commuter trains increased to 75 in 2001, up from 61 in 2000 and 71 for the previous five-year average.

A total of 321 rail incidents were reported to the Transportation Safety Board in 2001, down three per cent from 330 in 2000 and down even more significantly from 401 for the previous five-year average. Sixty per cent of these incidents involved cars carrying dangerous goods that leaked a product, when the leak was not the result of an accident.

Table 4-3 summarizes reported rail accidents from 1996 to 2001, including the average for 1996 to 2000.

**TABLE 4-3: ACCIDENTS IN RAIL TRANSPORTATION, 1996 – 2001**

Year	Number of Accidents	Accident Rate <sup>1</sup>	Fatalities	Serious Injuries
1996	1,305	17.2	117	129
1997	1,116	14.0	109	101
1998	1,075	13.6	101	75
1999	1,129	14.3	106	96
2000	1,065	13.3	87	66
1996–2000 Average	1,138	14.5	104	93
2001	1,064	12.9	98	88

<sup>1</sup> Number of accidents per million train-miles.

Source: Transport Canada, based on Transportation Safety Board data

In 2001, there were 92 fatal rail accidents with 98 fatalities. The number of fatal accidents is up ten per cent from the 2000 total of 84 and below the five-year average of 99. The number of fatalities is up from 87 in 2000 and below the five-year average of 104. Rail grade crossing accidents and accidents involving trespassers accounted for the majority of these fatalities.

The increase in rail-related deaths in 2001 can be attributed mainly to the rise in crossing fatalities. Fatal crossing accidents constituted 38 per cent of the total fatal accidents in 2001, up from 36 per cent in 2000 and the previous five-year average of 34 per cent. Crossing accidents involving passenger trains increased to 26 from 18 in 2000 but remain below the five-year average of 30.

A total of 279 crossing accidents occurred in 2001. This figure represents a six per cent increase from the 2000 total of 264, but is well below the five-year average of 298. Total fatalities as a result of crossing accidents rose to 47 in 2001, up from 33 in 2000. Public crossing accidents accounted for 80 per cent of all crossing accidents reported in 2001. Of these, 52 per cent occurred at automated crossings.

Table 4-4 shows the number of railway crossing accidents by province from 1996 to 2001, including the average from 1996 to 2000 and Canada-wide totals.

**TABLE 4-4: RAILWAY CROSSING ACCIDENTS BY PROVINCE, 1996 – 2001**

Province	1996	1997	1998	1999	2000	1996 – 2000 Average	2001
<b>Accidents<sup>1</sup></b>							
Newfoundland and Labrador/							
Prince Edward Island/							
Nova Scotia (163)	8	5	3	7	3	5.2	10
New Brunswick (198)	6	5	2	5	3	4.2	8
Quebec (1,478)	61	51	48	51	44	51.0	43
Ontario (5,277)	91	75	65	94	88	82.6	81
Manitoba (3,031)	46	30	34	19	21	30.0	25
Saskatchewan (6,353)	49	33	38	30	32	36.4	29
Alberta (3,767)	71	70	54	52	45	58.4	54
British Columbia (856)	33	38	29	24	28	38.0	28
Northwest Territories and Nunavut (15)	0	0	0	1	0	0.2	1
Yukon (8)	0	0	0	0	0	0.0	0
<b>Canada (21,146)</b>	<b>365</b>	<b>307</b>	<b>273</b>	<b>283</b>	<b>263</b>	<b>298.2</b>	<b>278</b>
Crossing Fatal Accidents	39	30	38	32	30	33.8	35
Passenger Train							
Related Accidents	40	30	29	31	18	29.6	26

<sup>1</sup> Figures in brackets denote estimated number of public crossings in each province or grouping of provinces as of March 2002.

Source: Transport Canada, based on Transportation Safety Board data

Table 4-5 summarizes trespasser accidents by province from 1996 to 2001, including the 1996 to 2000 average and Canada-wide totals.

**TABLE 4-5: RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1996 – 2001**

Province	1996	1997	1998	1999	2000	1996 – 2000 Average	2001
<b>Accidents</b>							
Newfoundland and Labrador/							
Prince Edward Island/							
Nova Scotia	4	0	0	0	0	0.8	1
New Brunswick	3	0	0	0	1	0.8	0
Quebec	32	15	12	26	14	19.8	10
Ontario	55	47	36	46	41	45.0	42
Manitoba	1	4	4	1	1	2.2	7
Saskatchewan	3	4	2	3	2	2.8	3
Alberta	8	7	10	10	6	8.2	9
British Columbia	21	21	14	9	14	15.8	7
<b>Canada</b>	<b>127</b>	<b>98</b>	<b>78</b>	<b>95</b>	<b>79</b>	<b>95.4</b>	<b>79</b>
Fatal Trespasser Accidents	67	69	59	61	53	61.8	55
Passenger Train							
Related Accidents	28	24	25	23	28	25.6	22

Source: Transport Canada, based on Transportation Safety Board data

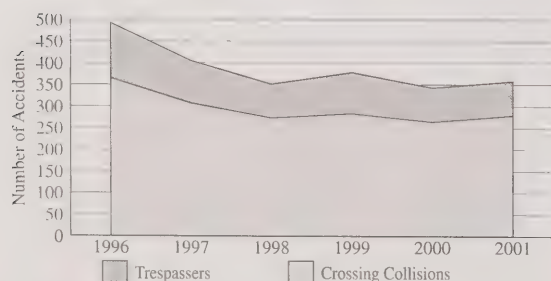
In 2001, the number of trespasser accidents remained stable at 79, well below the five-year average of 95. Once again, the majority of these accidents — more than half of those reported — occurred in Ontario. The number of fatal trespasser accidents increased in 2001, up to 55 from 53 in 2000. Despite the increase, however, this number is still below the five-year average. Sixty per cent of all rail-related fatal accidents were the result of trespasser accidents, a percentage that has remained consistent during the past five years.

Because grade crossing collisions and trespassing incidents account for such a high number of fatal rail-related accidents, Transport Canada participates in Direction 2006, a program established in 1996 to reduce these occurrences to 50 per cent below 1996 levels by the year 2006. Public and private railway stakeholders, provincial and municipal governments, law enforcement agencies, safety organizations, and railway companies and their unions are all partners with Transport Canada in the program. Working together, these organizations deliver public awareness, safety and education programs; and carry out research to improve safety and awareness of the risks related to grade crossings and trespassing.

Going even further, Transport Canada administers a funding program for safety improvements at selected grade crossings; partners with the Railway Association of Canada to deliver the "Operation Lifesaver" public awareness program; and takes a comprehensive approach to ensuring compliance with safety provisions at crossings and trespass areas.

Even though the number of crossing accidents increased in 2001 compared with 2000, the Direction 2006 partners are still on track with their goal, reaching 47 per cent of their target in the first five years of the program. For trespasser accidents, the Direction 2006 partners were also in line with their goal in 2001, reaching 75 per cent of their target.

**FIGURE 4-2: CROSSING AND TRESPASSER ACCIDENTS, 1996 – 2001**



Source: Transport Canada, based on Transportation Safety Board data

Figure 4-2 shows the number of crossing and trespasser accidents since Direction 2006 was established.

## ROAD

The most recent data available for motor vehicle traffic collisions are from 2000 for fatalities, injuries and casualty collisions. Property damage collisions are excluded from the following statistics.

### DOMESTIC OPERATIONS

Canada's road safety record has continued to improve steadily over the last several decades. In 2000, a total of 2,917 fatalities resulted from motor vehicle collisions, the lowest annual total in 45 years (statistics of this nature have been recorded since 1945). Road-related fatalities were down 1.8 per cent from the 1999 level, and 5.3 per cent from the 1995 – 1999 average.

Table 4-6 illustrates the national numbers of road-related casualty collisions, fatalities and injuries from 1995 to 2000.

**TABLE 4-6: TOTAL ROAD CASUALTY COLLISIONS, FATALITIES AND INJURIES, 1995 – 2000**

Year	Casualty Collisions	Fatalities	Persons Injured
1995	167,044	3,351	241,935
1996	158,990	3,091	230,890
1997	152,764	3,063	221,349
1998	150,974	2,934	217,754
1999	153,720	2,969	222,275
1995 – 1999 Average	156,698	3,082	226,841
2000	158,528	2,917	227,500
Per cent change 2000/Average	1.2	(5.3)	0.3
Per cent change 2000/1999	3.1	(1.8)	2.4

Source: 2000 Canadian Motor Vehicle Traffic Collision Statistics - TP 3322

Casualty collisions include all reportable motor vehicle collisions that result in a fatality or injury. Casualty collisions decreased from 1995 to 1998, but rose in 1999 and continued to rise in 2000. The 2000 total topped the previous five-year average by 1.2 per cent.

Table 4-7 shows the number of road fatalities in Canada, classified according to six categories of road users.

Drivers are the single largest segment of the road user population and account for the largest share of road fatalities. In 2000, drivers accounted for 51 per cent of the total number of road fatalities, while drivers and



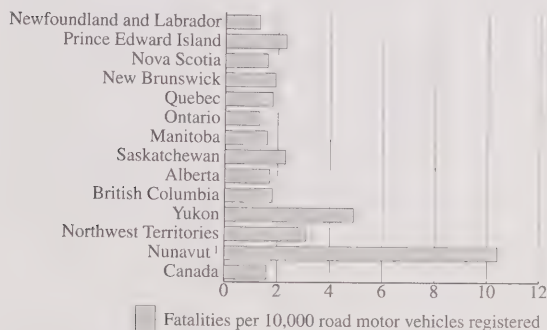
**TABLE 4-7: FATALITIES BY CATEGORY OF ROAD USER, 1995 – 2000**

	1995	1996	1997	1998	1999	1995-1999 Average	2000
Drivers	1,652	1,518	1,540	1,451	1,539	1,540	1,489
Passengers	920	825	812	716	734	801	776
Pedestrians	416	465	402	402	414	420	368
Bicyclists	64	60	67	77	69	67	42
Motorcyclists	166	128	122	165	159	148	179
Other	133	95	120	123	54	105	63

Source: 2000 Canadian Motor Vehicle Traffic Collisions Statistics - TP 3322

passengers combined accounted for almost 78 per cent. Pedestrians and motorcyclists accounted for 13 per cent and six per cent of fatalities, respectively.

Figure 4-3 compares average road fatality rates by jurisdiction from 1998 to 2000. The highest fatality rates in Canada occurred in Nunavut and the Yukon, which reflects the more difficult driving conditions and the relatively low number of vehicles registered in these territories. Ontario, with the largest road network and the highest number of vehicle registrations, continued to have one of the lowest fatality rates during this period, with only 1.3 fatalities per 10,000 road motor vehicles registered. This rate tied with Newfoundland and Labrador.

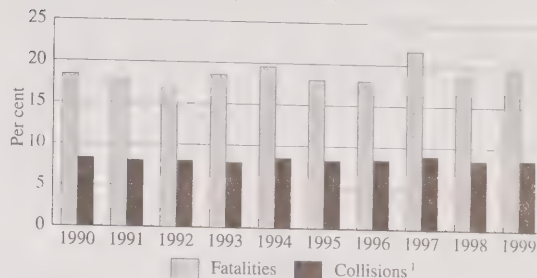
**FIGURE 4-3: THREE-YEAR AVERAGE FATALITY RATE, BY JURISDICTION, 1998 – 2000**

<sup>1</sup> Only one year of data, 2000, for Nunavut.

Source: Canadian Motor Vehicle Traffic Collision Statistics

Figure 4-4 shows the percentage of vehicles in collisions involving commercial vehicles and the corresponding percentage of fatalities from 1990 to 1999. (Please note that information pertaining to commercial vehicles is only available to 1999.)

For 1990 to 1999, commercial vehicles accounted for approximately eight per cent of all vehicles involved in collisions, yet collisions involving commercial vehicles were the source of roughly 19 per cent of all road

**FIGURE 4-4: PERCENTAGE OF COMMERCIAL VEHICLES INVOLVED IN COLLISIONS AND RELATED FATALITIES, 1990 – 1999**

<sup>1</sup> Vehicles involved in collisions

Source: Transport Canada, Traffic Accident Information Database

fatalities. In 1999, 586 fatalities resulted from collisions involving commercial vehicles, up from 557 in 1998.

Table 4-8 provides a breakdown of commercial and other vehicles involved in fatal collisions by type of vehicle from 1994 to 1999, including the 1994 – 1998 five-year average.

**TABLE 4-8: COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1994 – 1999**

Vehicle Type	1994	1995	1996	1997	1998	1994 – 1998 Average	1999
<b>Commercial</b>							
All Buses	43	31	39	32	43	38	33
Trucks greater than 4,536 kg	197	163	167	179	166	174	169
Tractor-trailers	328	346	294	335	286	318	359
<b>Total Commercial Vehicles</b>	<b>568</b>	<b>540</b>	<b>500</b>	<b>546</b>	<b>495</b>	<b>530</b>	<b>561</b>
Other vehicles involved in collisions with commercial vehicles	574	533	458	486	456	501	558
Total vehicles involved in collisions with commercial vehicles	1,142	1,073	958	1,032	951	1,031	1,119
Total all other vehicles involved in collisions	3,590	3,606	3,438	3,245	3,232	3,422	3,260
<b>Total all vehicles</b>	<b>4,732</b>	<b>4,679</b>	<b>4,396</b>	<b>4,277</b>	<b>4,183</b>	<b>4,453</b>	<b>4,379</b>

Source: Transport Canada, Traffic Accident Information Database

Table 4-9 shows the number of vehicles involved in fatal motor vehicle collisions by type of vehicle from 1994 to 1999, including the 1994 – 1998 five-year average.

Private automobiles accounted for 53 per cent of the vehicles involved in fatal collisions in 1999, down slightly from the previous five-year average of 54 per cent. Light trucks and vans had the second largest share of fatal collisions by vehicle, with 25 per cent, up from an average of 24 per cent in the previous five years. The combined categories of truck (tractor-trailer, trucks greater than 4,536 kilograms and other) followed with 12 per cent.



**TABLE 4-9: VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1994 – 1999**

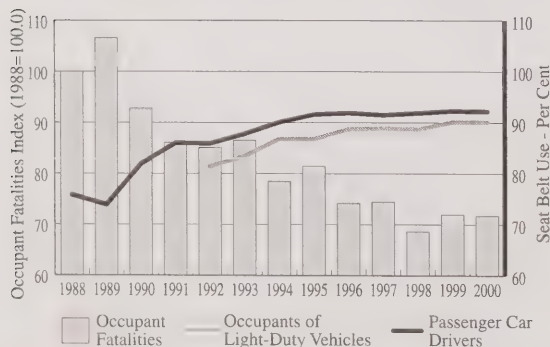
Vehicle Type	1994	1995	1996	1997	1998	1994 – 1998	
						Average	1999
Automobile	2,605	2,583	2,431	2,276	2,167	2,412	2,317
Light Trucks and Vans	1,083	1,077	1,037	1,059	1,053	1,062	1,110
Truck							
Tractor-Trailer	328	346	294	335	286	318	359
Truck greater than 4,536 kg	197	163	167	179	166	174	169
Other	23	25	15	21	18	20	10
Bus							
School	16	10	12	8	10	11	13
Intercity	7	5	7	4	5	8	7
Transit	11	6	7	9	11	9	7
Bus unspecified	9	10	13	11	17	12	6
Motorcycle	164	170	141	125	169	154	169
Bicycle	91	70	63	74	79	75	69
Farm Equipment	32	36	37	32	42	36	33
Snowmobiles	39	64	50	41	49	49	18
Train/Streetcar	20	11	16	11	16	15	11
Motor Home	32	24	28	19	4	107	9
All Terrain Vehicles	13	4	8	9	31	13	13
Other	62	75	70	64	60	66	59
<b>Total</b>	<b>4,732</b>	<b>4,679</b>	<b>4,396</b>	<b>4,277</b>	<b>4,183</b>	<b>4,453</b>	<b>4,379</b>

Source: Transport Canada, Traffic Accident Information Database

## SEAT BELT USE

The most effective way of reducing fatalities on highways is to wear a seat belt in a motor vehicle. Under the *Motor Vehicle Safety Act* (MVSA), Transport Canada has required motor vehicle manufacturers to install seat belts in all new passenger cars since January 1, 1971. The provincial and territorial governments followed, gradually enacting legislation that required the use of seat belts beginning in January 1976.

Transport Canada has conducted national seat belt surveys each June since 1979. The results appear in Figure 4-5. These surveys determine the rates of seat belt use for drivers of passenger cars and occupants of

**FIGURE 4-5: OCCUPANT FATALITIES DECREASE AS SEAT BELT WEARING RATES INCREASE, 1988 – 2000**


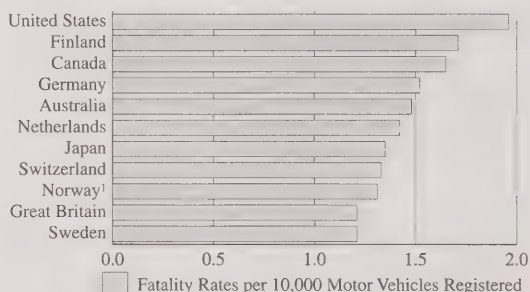
Source: Transport Canada, National Seat Belt Survey; Traffic Accident Information Database

light-duty vehicles. The results for the latter category have been collected only since 1992. Figure 4-5 clearly shows that occupant fatalities decrease as the use of seat belts increases. Even with these proven safety benefits, seat belt use for drivers of passenger cars seems to have reached a plateau, hovering just above 90 per cent since 1995.

## INTERNATIONAL COMPARISONS

Canada ranks well among member countries of the Organisation for Economic Co-operation and Development (OECD), in part because of its continued success in improving motor vehicle safety. Notwithstanding, we have the knowledge to further reduce road fatalities and we need to do more if we are to keep pace with progress in other developed countries.

Figure 4-6 shows the average motor vehicle fatality rates among selected OECD countries from 1998 to 2000.

**FIGURE 4-6: AVERAGE MOTOR VEHICLE FATALITY RATES AMONG SELECTED OECD COUNTRIES, 1998 – 2000**


<sup>1</sup> Motor vehicle Registrations are estimated for the year 2000.

Source: International Road Traffic Accident Database, OECD

Vehicle ownership rates are one of the indicators of motor vehicle activity and exposure to risk. Canada's vehicle ownership rate was 58.2 per 100 inhabitants in 2000, compared with the US rate of 78.9, the highest rate among OECD countries. Ownership rates are higher in Canada and the United States because there is a greater degree of reliance on road transportation in these two countries. Unfortunately, these higher ownership rates also correlate with a higher exposure to risk for road users.

## MARINE

### OVERVIEW

In general, shipping accidents have been on the decline in the past ten years. Since 1992, the number of shipping accidents has decreased, on average, six per cent per year. There was a slight interruption in this downward trend in 2001, however, when 458 accidents were reported to the Transportation Safety Board. This figure represents a two per cent increase over 2000, but a 12 per cent decrease from the previous five-year average.

Once again, grounding accidents accounted for the largest proportion of shipping accidents by type in 2001 with 25 per cent. The totals of most other accident types also remained comparable or declined from previous year totals. Noted increases over the five-year average occurred in fire/explosion accidents with 84 reported, which is a 14 per cent rise; and flooding accidents with 70 reported, which is a 13 per cent rise. The number of capsizing accidents decreased remarkably, however, with seven reported, which is down 53 per cent from both the 2000 total and the previous five-year average.

Of the 506 vessels involved in shipping accidents in 2001, Canadian fishing vessels sustained the largest proportion, with 54 per cent. This percentage translates to 232 fishing vessels involved in reported accidents, down 15 per cent from the previous five-year average. The most reported accidents by type for Canadian fishing vessels were grounding with 26 per cent; fire/explosion with 25 per cent; and flooding with 24 per cent. Fire/explosion accidents at 57 were up 39 per cent over the previous five-year average, while flooding accidents at 56 were up ten per cent. In addition, two accident categories saw remarkably large reductions from the previous five-year averages: grounding accidents at 60 were down 19 per cent, while propeller/rudder/structural damage accidents, at seven, were down 72 per cent.

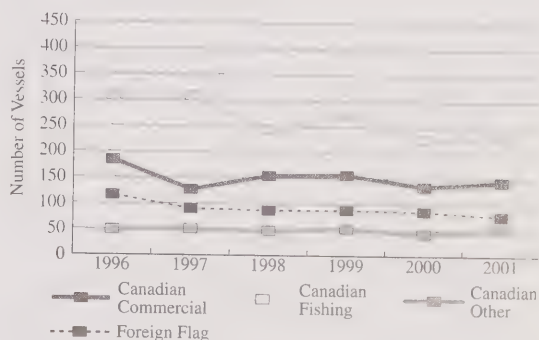
Canadian commercial vessels involved in shipping accidents numbered 144 in 2001, which is a seven per cent increase over the 2000 figure but five per cent below the previous five-year average. The increase over 2000 was noted by bulk carrier/ore, bulk, oil (OBO) vessels involved in accidents, which at 32 is up 28 per cent. A rise in reported grounding and striking accidents by these vessels was the main cause for the increase in 2001. For accidents that pose a greater risk to persons and the environment, Canadian ferry and passenger vessel numbers remained consistent with recent years at 37, while tanker vessels involved numbered six, down 40 per cent from the five-year average. Striking and grounding accidents were the most

prevalent accident types reported by Canadian commercial vessels in 2001, accounting for 30 per cent and 21 per cent, respectively.

In the remaining vessel categories, service, non-commercial, offshore and other Canadian vessels numbered 53 in 2001, an increase of 23 per cent over 2000 and four per cent over the five-year average. Service vessels accounted for 42 per cent of these vessels, while pleasure craft accounted for approximately 33 per cent.

Figure 4-7 illustrates the vessels involved in shipping accidents from 1996 to 2001, organized according to vessel flag and category.

**FIGURE 4-7: VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL FLAG AND VESSEL CATEGORY, 1996 - 2001**



Source: Transport Canada, based on Transportation Safety Board data

The number of foreign flag vessels involved in shipping accidents continued to decline in 2001. There were 77 of these vessels in total, which is down ten per cent from 2000 and 17 per cent from the previous five-year average. According to vessel category, foreign flag vessel numbers remained comparable with their respective five-year averages, for the most part. The exception was bulk carrier/ore, bulk, oil (OBO) vessels, which at 25, is well below the five-year average of 41. These vessels continued to represent the largest percentage of involvement, at 33 per cent, followed by cargo/container vessels with 27 per cent, and fishing vessels with 18 per cent. In 2001, 42 per cent of foreign-flag vessels experienced striking accidents, while 22 per cent were grounding accidents.

Moving to accidents aboard ships, there were 59 reported in 2001, a 23 per cent decrease from 2000 and a nine per cent decrease from the five-year average. These declines are largely attributable to a decline in

aboard-ship accidents on fishing vessels. Of the shipboard accidents in 2001, commercial vessels accounted for 49 per cent and fishing vessels for 39 per cent.

There were 24 fatal marine accidents in 2001, up from the previous five-year average of 21. There were 33 related fatalities, also up from the previous five-year average of 31. Seventeen of these fatalities resulted from fishing vessel occurrences, and six occurred on foreign flag vessels. Nearly one third of fatal accidents resulted in multiple casualties. Approximately one half were the result of accidents aboard ship.

In 2001, nine per cent of shipping accidents resulted in a vessel loss, which is consistent with the previous five-year average. Once again, the overwhelming majority of vessels lost were small vessels of less than 150 gross registered tonnage. In fact, vessels of this type account for 95 per cent of lost vessels. Of those lost in 2001, 88 per cent were fishing vessels. Sinking/foundering/capsizing accidents and fire/explosion accidents each accounted for 43 per cent of vessel losses. Four foreign flag vessels were lost in Canadian waters.

Marine incidents were down four per cent in 2001 compared with 2000. At 239 incidents, however, the rate was 36 per cent above the previous five-year average. Of these incidents, 41 per cent were caused by engine/rudder/propeller problems. Fishing vessels experienced the largest number of incidents involving these problems, recording 43 in all. Close-quarters situations accounted for 25 per cent of incidents, with the greatest number of occurrences reported by pleasure craft, fishing vessels and ferry/passengers vessels.

In 2001, there were 62 marine injuries, 23 per cent below the previous five-year average. Eighty four per cent of these injuries resulted from accidents aboard ship.

Table 4-10 compares marine occurrences in 2001 with the previous five-year average from 1996 to 2000.

**TABLE 4-10: MARINE OCCURRENCES IN 2001 VERSUS THE PREVIOUS FIVE-YEAR AVERAGE, 1996 – 2001**

	1996 – 2000						
	1996	1997	1998	1999	2000	Average	2001
Shipping Accidents	607	534	490	535	448	523	458
Accidents Aboard Ship	58	60	59	69	77	65	59
Fatalities	25	24	48	29	31	31	33
Vessels Lost	60	60	49	45	37	50	40
Incidents	132	155	166	179	250	176	239
Injuries	71	84	80	80	90	81	62

Source: Transport Canada, based on Transportation Safety Board data

## REGIONAL OVERVIEW

The Transportation Safety Board defines six regional boundaries for reporting purposes: Western, Central, Laurentian, Maritimes, Newfoundland and Arctic. This report combines the Maritimes and Newfoundland regions to more accurately reflect Transport Canada's Atlantic Region. Accidents involving Canadian vessels that occur in foreign waters are included with the regular statistical occurrence reporting.

The Western Region reported 158 shipping accidents in 2001, 14 per cent fewer than the previous five-year average. In large part, this decline can be attributed to a decrease in the number of fishing vessel accidents. Thirteen vessels were lost in this region, or one third of the national total. Accidents aboard ship increased to 29, compared with the previous five-year average of 19. Reported incidents increased for the second year in a row to 122, which is double the five-year average and accounts for approximately half the national total.

The Central Region reported 67 shipping accidents in 2001, which is a 12 per cent increase over the previous five-year average. Thirteen vessels in the ferry/passenger categories were largely responsible for this increase. Three accidents aboard ship were reported, half the previous five-year average. Fatalities increased to nine, however, in contrast to two the previous year and only one in the previous five-year average.

In the Laurentian Region, reported marine occurrences remained consistent or fell below the previous five-year averages. In total, 59 shipping accidents, nine accidents aboard ship, two fatalities, two vessels lost and 39 incidents were reported.

The combined Maritimes and Newfoundland regions also saw a decrease in shipping accidents, with 159 reported, which is down 15 per cent from the five-year average. Accidents aboard ship, with 15 occurrences reported, registered at half the total for 2000. The number of fatalities was also down to ten, which is 38 per cent lower than the previous five-year average. Vessel losses, at 25, remained steady, and represented 63 per cent of the national total. Marine incidents also remained constant, at 45.

The Arctic Region reported only four shipping accidents, half the previous five-year average. In addition, there were no vessels lost, no fatalities and no accidents aboard ship reported in 2001.

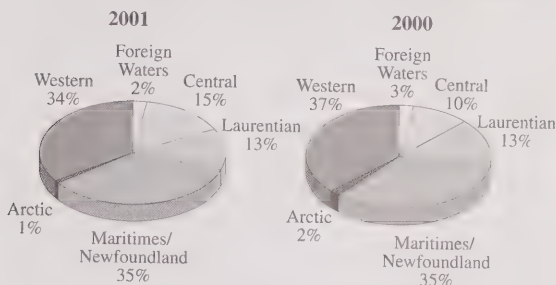
In foreign waters, Canadian vessels were involved in 11 reported shipping accidents, down from the previous five-year average of 14. There were also three accidents aboard ship and six marine incidents, numbers for both



that are comparable to the respective previous five-year averages. No vessels were reported lost.

Figure 4-8 compares the shipping accidents in the six Transportation Safety Board regions in 2000 and 2001.

**FIGURE 4-8: SHIPPING ACCIDENTS BY TRANSPORTATION SAFETY BOARD REGION, 2001 VERSUS 2000**

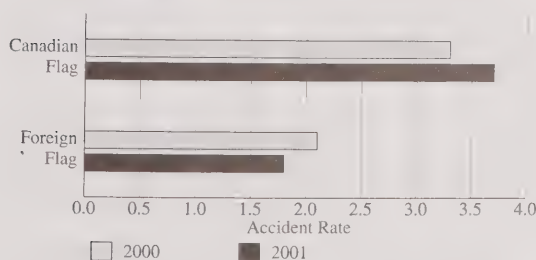


Source: Transport Canada, based on Transportation Safety Board data

The source for vessel traffic data, Statistics Canada, has modified as of the year 2000 the treatment of certain domestic vessel movements. As a result of this adjustment, more domestic movements are reported making it difficult to compare with information from earlier years.

In terms of the level of shipping activity, the estimated number of trips for Canadian commercial vessels in 2001 (39,040) decreased by 2.6 per cent from 2000, whereas there was a seven per cent increase in the number of these vessels involved in shipping accidents in 2001 (144). As a consequence, the projected accident rate, per 1,000 trips, for Canadian commercial vessels increased to 3.7 in 2001, from 3.3 in 2000.

**FIGURE 4-9: CANADIAN VERSUS FOREIGN FLAG COMMERCIAL VESSEL ACCIDENT RATE, 2000 – 2001**



Note: The accident rate is based on the number of commercial vessels involved in shipping accidents per 1,000 trips in domestic and international trade.

Source: Transport Canada, based on Transportation Safety Board data

The 2001 forecasted number of foreign flag commercial vessel trips (33,880), showing a one per cent decrease from 2000, together with a 14 per cent decrease in the number of these vessels involved in shipping accidents (61), present a reduced accident rate of 1.8 for these vessels in 2001.

When comparing the resulting accident rates produced over the same period for Canadian and foreign flag vessels, it is important to recognize that factored in Canadian commercial vessels include also the numerous small vessels operating daily in more diverse waters; whereas foreign flag vessels are comprised mainly of larger vessels such as tankers, bulk carriers and container vessels. This incongruity generates the lower accident rate shown for foreign flag vessels, and a seemingly better level of safety being attained.

## PORT STATE CONTROL

Two Memoranda of Understanding (MOU) on Port State Control affect Canada: the Paris MOU, which includes Canada and 18 European countries as signatories; and the Tokyo MOU, which includes Canada and 17 Asia-Pacific countries as signatories. These agreements require that members inspect a certain percentage of individual vessels entering their ports. For the Paris MOU, members must achieve an inspection rate of 25 per cent, while for the Tokyo MOU, members are working toward 75 per cent.

According to preliminary data, there were 1,197 inspections under these MOU in Canada in 2001, carried out on vessels from 92 different flags of registry. Of the vessels inspected, 53 per cent were found to have deficiencies. Of these, 14 per cent were serious enough to require the vessels to be detained, largely due to deficiencies in lifesaving and firefighting equipment, and structural defects. The majority of vessels (43 per cent) inspected were bulk carriers, with 11 per cent detained. The average age of detained vessels was 16.6 years.

## RECREATIONAL BOATING

The most recent year for which data is available on drownings from recreational boating in Canada is 1999. During that year, 122 drownings occurred. This figure rose two per cent from 1998, yet remained 12 per cent below the 1994 – 1998 five-year average. Recreational canoe drownings declined in 1999 to 16, down 36 per cent from 1998 and approximately 50 per cent below the previous five-year average.

Of the drownings that occurred in 1999, 34 per cent were the result of capsizing accidents and 20 per cent



were the result of falling overboard. As in previous years, most recreational boating drownings occurred while the victims were fishing. In 1999, these accidents accounted for 39 per cent of drownings. Drownings related to power boating accounted for 25 per cent.

The majority of recreational boating drownings occurred in Ontario (34 per cent), followed by Quebec (22 per cent) and British Columbia (21 per cent).

There were 12 non-drowning boating fatalities in 1999, down from 15 in 1998. Of the non-drowning boating fatalities, collision/trauma and immersion hypothermia each accounted for 50 per cent. Six of these fatalities occurred in Ontario and four in Quebec.

The source for this information is *The Canadian Red Cross Society's National Drowning Report: An Analysis of Drownings and Other Water-Related Injury Fatalities in Canada for 1999*, Visual Surveillance Report: 2001 Edition.

## AVIATION

This section includes only reported aviation accidents involving Canadian-registered aircraft and reported incidents involving both Canadian and foreign-registered aircraft occurring in Canada. It does not include occurrences involving ultralights and advanced ultralights.

Canadian-registered aircraft were involved in 295 accidents in 2001, down eight per cent from 319 the previous year, and 15 per cent from the 349 average for 1996 to 2000. This total represents the lowest annual number of aviation accidents involving Canadian-registered aircraft in the last 25 years.

Table 4-11 shows the number of accidents and fatal accidents by type of aircraft from 1996 to 2001.

Canadian-registered airliners<sup>1</sup> were involved in five accidents in 2001, down from nine the previous year and the previous five-year average of eight. None of these five accidents resulted in fatalities.

The accident rate in 2001 was 7.6 accidents per 100,000 hours flown, below both the accident rate for 2000 and the five-year average.

TABLE 4-11: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1996 – 2001

Type of aircraft	1996 – 2000						
	1996	1997	1998	1999	2000	Average	2001
<b>Accidents</b>							
Aeroplanes Involved	274	295	316	286	257	286	242
Airliners	4	8	14	6	9	8	5
Commuters	12	13	10	13	4	10	8
Air Taxis	92	110	108	70	45	85	37
Aerial Work	13	10	18	18	19	16	18
Private/Corporate/State	153	154	166	179	180	166	174
Helicopters Involved	56	56	57	46	53	54	47
Other Aircraft <sup>1</sup>	12	10	17	15	12	13	9
<b>Total<sup>2</sup></b>	<b>342</b>	<b>356</b>	<b>386</b>	<b>341</b>	<b>319</b>	<b>349</b>	<b>295</b>
<b>Fatal Accidents</b>							
Aeroplanes Involved	34	29	24	28	26	28	24
Airliners	1	0	0	1	1	1	0
Commuters	1	0	1	2	1	1	1
Air Taxis	11	11	8	5	3	8	5
Aerial Work	0	0	0	1	2	1	1
Private/Corporate/State	21	18	15	19	19	18	17
Helicopters Involved	7	8	6	4	11	7	6
Other Aircraft <sup>1</sup>	3	0	2	4	1	2	3
<b>Total<sup>2</sup></b>	<b>44</b>	<b>36</b>	<b>31</b>	<b>34</b>	<b>38</b>	<b>37</b>	<b>33</b>

<sup>1</sup> Includes gliders, balloons and gyrocopters.

<sup>2</sup> The number of aircraft involved may not add to the number of accidents, as some accidents involve multiple aircraft.

Source: Transport Canada, based on Transportation Safety Board data

It is important to exercise caution when reading the numbers in the air taxi category because of a reclassification in 1999. Before 1999, flight training services were classified as air taxi but are now classified in the private/corporate/state aeroplane category.

All categories, other than commuter aeroplanes<sup>2</sup> recorded a reduction in accident occurrences compared with the previous year. In addition, with the exception of the private/corporate/state and aerial work aeroplanes, all categories were below the five-year average.

In 2001, private/corporate/state aeroplanes accounted for 58 per cent of the total number of accidents. The trend in accidents involving these aeroplanes has been decreasing steadily over the last ten years, even taking into account the slight increase in accidents during the last few years. On average, half of all accidents involving Canadian-registered aeroplanes were in the private/corporate/state category. They were involved in 17 fatal accidents resulting in 31 deaths, more than half of all fatal accidents in 2001.

In addition, there were eight accidents involving Canadian-registered commuter aeroplanes in 2001, up

- 1 Airliners are aeroplanes used by a Canadian air operator, in an air transport service or in aerial work involving sightseeing operations, that have a maximum take-off weight of more than 8,618 kilograms (19,000 pounds) or for which a Canadian type certificate has been issued authorizing the transport of 20 or more passengers.
- 2 Regional or large commuter are aeroplanes used by a Canadian air operator, in air transport service or in aerial work involving sightseeing operations, of the following characteristics:  
multi-engined aircraft that have a Maximum Certified Take-Off Weight (MCTOW) of 8,618 kilograms (19,000 pounds) or less and a seating configuration, excluding pilot seats, of 10 to 19 inclusive; or turbo-jet-powered aircraft that have a maximum zero fuel weight of 22,680 kilograms (50,000 pounds) or less and for which a Canadian type certificate has been issued authorizing the transport of not more than 19 passengers.

significantly from four the previous year and below the five-year average of ten. There was also one fatal accident involving a Canadian-registered commuter aeroplane, resulting in two fatalities.

Most commercial air accidents in 2001, involved aeroplanes in the air taxi category, which accounted for 13 per cent of the total number of accidents. In 2001, there were 37 accidents involving these types of aeroplanes, down from the 2000 total of 45. Five fatal accidents were reported in 2001 during air taxi operations, resulting in 12 fatalities. One fatal accident occurred during aerial work operations, resulting in the deaths of two people.

Except for the Prairie and Northern Region, all regions saw a decrease in the number of accidents in 2001 from 2000. The most significant decline occurred in the Atlantic Region, which returned closer to previous year's levels with a total of 18 accidents compared with 29 in 2000. The Ontario, Pacific and Quebec regions also showed decreases in 2001, ranging from 13 to 15 per cent. The number of accidents in the Prairie and Northern Region, however, rose by 16 per cent, from 86 to 100, but still remained below the five-year average of 115.

Table 4-12 summarizes air accidents by region over the last six years. Table 4-13 shows the corresponding number of air fatalities by region over the same period.

**TABLE 4-12: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1996 – 2001**

Transport Canada Region	1996	1997	1998	1999	2000	1996 – 2000 Average	2001
<b>Accidents</b>							
Atlantic	18	20	20	16	29	21	18
Quebec	39	60	41	46	55	48	48
Ontario	72	84	105	106	73	88	63
Prairie and Northern	122	108	133	124	86	115	100
Pacific	83	72	70	40	68	67	58
Outside Canada	8	12	17	9	8	11	8
<b>Total</b>	<b>342</b>	<b>356</b>	<b>386</b>	<b>341</b>	<b>319</b>	<b>349</b>	<b>295</b>

Source: Transport Canada, based on Transportation Safety Board data

**TABLE 4-13: FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1996 – 2001**

Transport Canada Region	1996	1997	1998	1999	2000	1996 – 2000 Average	2001
<b>Fatalities</b>							
Atlantic	6	2	5	1	7	4	3
Quebec	12	18	27	9	8	15	13
Ontario	12	8	9	14	5	10	8
Prairie and Northern	13	17	20	17	15	16	19
Pacific	20	22	12	24	19	19	17
Outside Canada	8	10	12	0	11	8	1
<b>Total</b>	<b>71</b>	<b>77</b>	<b>85</b>	<b>65</b>	<b>65</b>	<b>73</b>	<b>61</b>

Source: Transport Canada, based on Transportation Safety Board data

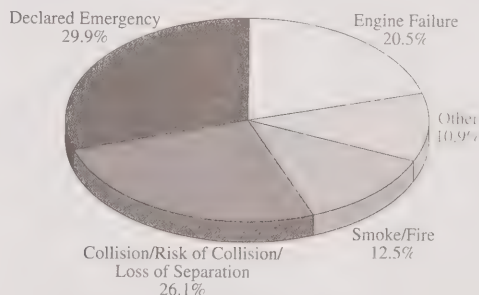
In 2001, air fatalities decreased slightly to 61 from 65 in 2000, and remained considerably below the 1996 – 2000 average of 73. In the Prairie and Northern Region, the number of fatalities increased to 19, the highest number of fatalities in all regions. Aviation fatalities in the Quebec Region also showed a significant increase in 2001, with 13 fatalities compared with eight in 2000. Aviation fatalities increased in the Ontario Region in 2001 as well, but decreased in the Atlantic and Pacific regions. The 61 fatalities in 2001 were the result of 33 accidents.

In 2001, there were 37 serious injuries resulting from accidents, which is below both the 2000 total of 53 and the five-year average of 50.

There were 853 reportable aviation incidents in 2001, up 18 per cent from 2000 levels and registering above the 1996 – 2000 average of 717. This increase can be linked to a rise in the number of smoke/fire incidents, up 27 per cent from 2000, and the number of collision/risk of collision/loss of separation incidents, up 32 per cent from 2000 levels. Declared emergencies continued to represent the largest share of reported incidents, at 30 per cent.

Figure 4-10 illustrates reportable incidents in 2001.

**FIGURE 4-10: REPORTABLE INCIDENTS OF ALL AIRCRAFT, 2001**



Source: Transport Canada, based on Transportation Safety Board data

In December 1999, Transport Canada finalized a new civil aviation safety framework entitled *Flight 2005*, a document that outlines the department's aviation safety focus over the next five years. *Flight 2005* builds on Canada's excellent aviation safety record to bring the Canadian aviation industry to a new level of safety with a goal of reducing the number of aviation accidents and increasing public confidence in the safety of the aviation system by the year 2005.

A summary document entitled *Implementing Flight 2005* contains a broad overview of initiatives underway. A

status report is posted on the Transport Canada Civil Aviation web site that provides progress on these initiatives ([www.tc.gc.ca/aviation/2005/imptoc\\_e.htm](http://www.tc.gc.ca/aviation/2005/imptoc_e.htm)).

One of the more significant areas to be addressed is the implementation of the safety management system concept into aviation companies. Implementing safety management systems means instituting a formal framework for integrating safety into day-to-day operations to instill a safety culture. It will ensure that safety is accorded the management time and resources it deserves. A safety management system education campaign is now in its second phase and briefing sessions with industry and stakeholders are ongoing.

In keeping with the safety management systems approach in aviation organizations, Civil Aviation is looking at instituting a formal framework for the group's own management system. The Integrated Management System framework examines how work is organized in support of the organization's strategic direction with a focus on the management of key processes to maximize resource utilization.

## INTERNATIONAL COMPARISONS

Table 4-14 compares the percentage of fatal air accidents involving airliner/commuter and private/corporate/state aircraft for Canada and the United States from 1995 to 2000.

**TABLE 4-14: FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND UNITED STATES, 1995 – 2000**

	1995	1996	1997	1998	1999	1995 – 1999 Average	2000
<b>Canada</b>							
Airliner/Commuter							
Accidents	26	16	21	24	19	21	13
Fatal Accidents	3	2	0	1	3	2	2
Fatal Accidents (per cent)	11.5	12.5	0	4.2	15.8	8.5	15.4
Private/Corporate/State							
Accidents	155	153	154	166	179	161	180
Fatal Accidents	21	21	18	15	19	19	19
Fatal Accidents (per cent)	13.5	13.7	11.7	9.0	10.6	11.6	10.6
<b>United States</b>							
Airliner/Commuter							
Accidents	48	48	65	58	65	57	66
Fatal Accidents	5	6	9	1	7	6	4
Fatal Accidents (per cent)	10.4	12.5	13.8	1.7	10.8	9.9	6.1
Private/Corporate/State <sup>1</sup>							
Accidents	2,053	1,909	1,851	1,909	1,913	1,927	1,835
Fatal Accidents	412	360	352	368	342	367	341
Fatal Accidents (per cent)	20.1	18.9	19.0	19.3	17.9	19.0	18.6

1 Scheduled and non-scheduled commercial services with ten or more seats and scheduled services with less than ten seats.

2 Referenced as general aviation in the US, (i.e. Civil aviation, excluding commercial services).

Source: Transport Canada, based on Transportation Safety Board data and US National Transportation Safety Board

It is difficult to compare Canadian and US accident data because each country classifies and records its occurrence and activity data differently. This difficulty in making comparisons should improve in the future, however, because both countries are members of international panels and working groups that are trying to establish a common taxonomy and standardized method for collecting information on aviation safety.

## TRANSPORTATION OF DANGEROUS GOODS

Every year, 27 million dangerous goods shipments move across Canada. Most of these shipments include goods that directly influence and improve the lifestyle that Canadians have come to expect and enjoy. And all these shipments contain goods that can threaten public safety if involved in an accidental release. The Transportation of Dangerous Goods (TDG) program works to enhance public safety by ensuring that dangerous goods are transported as safely as possible.

In 2001, there were 464 reportable dangerous goods accidents. TDG accidents are "reportable" if they are severe enough to meet the reporting requirements defined in the TDG Regulations. TDG accidents can occur while dangerous goods are being transported, while they are being handled, or during temporary storage pending transport. Very few, however, are caused by the dangerous goods themselves. In 2001, there was one reportable TDG accident directly caused by dangerous goods. No deaths or injuries resulted from this accident.

Table 4-15 compares reportable accidents involving dangerous goods by mode and phase of transport from 1996 to 2001. "In-transit" accidents include those that occurred during actual transport. "Not-in-transit" accidents are those that took place at facilities where the goods

**TABLE 4-15: REPORTABLE DANGEROUS GOODS ACCIDENTS BY MODE AND PHASE OF TRANSPORT, 1996 – 2001**

Year	In Transit				Not in Transit	Total
	Road	Rail	Air	Marine <sup>1</sup>		
1996	239	35	9	1	237	521
1997	166	16	6	1	194	383
1998	178	11	4	0	239	432
1999	185	17	3	0	274	479
2000 <sup>2</sup>	234	18	4	3	216	475
1996 – 2000						
Average	200	19	5	1	232	458
2001 <sup>3</sup>	187	16	7	3	251	464

1 The TDG program does not cover dangerous goods transported in bulk on ships or by pipeline.

2 Revised figures.

3 A fraction of the 2001 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System



were prepared for transport or stored in the course of transport. From 1992 to 2001, more dangerous goods accidents occurred at the handling stage (52 per cent) than while they were being transported (48 per cent).

Table 4-16 summarizes deaths and injuries caused by dangerous goods during reportable accidents that involved dangerous goods. It also shows injuries by level of severity. Minor injuries refer to those injuries that require first-aid treatment, moderate injuries involve emergency hospital treatment, and major injuries require overnight hospitalization. Transport Canada achieved its target of no deaths attributed to dangerous goods in 2001. The number of injuries caused by dangerous goods, at 43, was up slightly from 2000 levels, but in line with the previous five-year average of 44.

**TABLE 4-16: DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1996 – 2001**

Year	Deaths due to Dangerous Goods	Injuries due to Dangerous Goods			Totals
		Major	Moderate	Minor	
1996	1	2	10	16	28
1997	3	15	39	6	60
1998	2	1	36	12	49
1999 <sup>1</sup>	2	11	16	12	39
2000 <sup>2</sup>	2	5	22	12	42
1996 – 2000					
Average	2	7	25	12	44
2001 <sup>3</sup>	0	8	20	15	43

1 Thirty-one employees were exposed to a carbon disulphide release in Ottawa, Ontario.

2 Revised figures.

3 A fraction of the 2001 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

Table 4-17 lists the total number of deaths and injuries that occurred at reportable accidents involving dangerous goods. In most cases, the deaths and injuries were caused by the accident itself (e.g. a collision), not by the dangerous goods.

**TABLE 4-17: TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1996 – 2001**

Year	Deaths All Causes	Injuries			Totals
		Major	Moderate	Minor	
1996	9	16	37	23	76
1997	15	50	73	11	134 <sup>1</sup>
1998	13	38	56	15	109
1999	28 <sup>2</sup>	84 <sup>2</sup>	143 <sup>3</sup>	19	246
2000 <sup>4</sup>	20	53	50	19	122
1996 – 2000					
Average	17	48	72	17	137
2001 <sup>5</sup>	24	37	34	23	94

1 Twenty-seven passengers injured in one bus-truck collision in Fox Creek, Alberta.

2 Seven deaths and 45 injuries were due to a multiple highway vehicle collision in Windsor, Ontario.

3 Ninety-eight passengers were injured in a train collision with three hopper railway vehicles in Thamesford, Ontario.

4 Revised figures.

5 A fraction of the 2001 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

## TRANSPORTATION SECURITY AND THE EVENTS OF SEPTEMBER 11, 2001

The September 11, 2001, terrorist attacks in the United States have demonstrated how major security-related events can affect the flow of traffic in the air, on the ground or at sea. They have revealed the extent to which transportation security is fundamental not only to the personal safety of Canadians, but also to the prosperity of our nation. These events have also fundamentally changed how transportation security must be viewed and delivered for all modes.

Many sectors of the transportation industry were affected by September 11: planes were grounded for days, and increased security provisions were introduced at airports when air traffic was restored; public concerns over potential threats exacerbated the slowdown in international air travel that was initiated by signs of an economic slowdown in industrialized countries; and there were delays of surface transport at major Canada-US border crossings, affecting transborder trucking operations.

Transport Canada is responsible for developing and implementing transportation security policies, programs and regulations commensurate with the potential risk and threat level identified with each mode; reviewing them and adjusting them to political, economic and technological changes; and harmonizing them to reflect global changes. Transport Canada also ensures awareness of and compliance with regulations and related technical standards. Moreover, it develops and tests emergency readiness plans to improve its ability to assist in the provision of transportation services and resources in emergency circumstances. In doing this, Transport Canada works closely with many parties: international organizations; Canada's key trading partners; various industry stakeholders; provinces and territories and other federal government departments and agencies with security and emergency readiness responsibilities.

Transport Canada plays a key role in civil aviation security. This includes setting standards for the training and performance of screening personnel. It also includes auditing and regularly inspecting air carriers, airports and screening officials to ensure uniform compliance with Transport Canada security standards and to maintain or improve the performance of air carrier and airport screeners. Transport Canada meets or surpasses practices and standards recommended by the International Civil Aviation Organization (ICAO), and consults extensively with industry stakeholders and



various representative organizations. Prior to the events of September 11, two new key initiatives had been undertaken to further enhance aviation security: the development of a regulatory framework for deploying new explosives-detection systems, starting in 2003; and an automated fingerprint identification system for airport personnel security clearance with access to restricted areas.

## IMMEDIATE ACTIONS TAKEN FOLLOWING SEPTEMBER 11, 2001

Within an hour of the September 11 events, Transport Canada had worked closely with NAV Canada in cooperation with the Department of National Defense, North American Aerospace Defence Command (NORAD), and the US Federal Aviation Administration (FAA) and Airport Authorities across the country to close Canadian airspace to air traffic, to eliminate the possibility of further terrorist acts. All commercial and private flights were affected, including passenger, mail and cargo flights. Police, military and humanitarian flights were the only exceptions. All airways to the continental United States were closed and, to help that country cope with the emergency, all flights destined for US airspace were diverted to Canadian airports. Table 4-18 shows that eastern Canada accepted more than half of the 224 diverted flights. For up to several days until flights

**TABLE 4-18: AIRCRAFT DIVERTED ON SEPTEMBER 11, 2001**

<i>Diverted to Destination</i>	<i>Flights</i>
Atlantic Canada	126
Quebec	23
Ontario	18
Prairies and Territories	24
British Columbia	33
<b>Total</b>	<b>224</b>

Note: Approximately 500 aircraft were en route to North American airports at the time of the terrorist attacks on September 11. Approximately half returned to their departure points, while the rest were diverted to various destinations in Canada.

Source: NAV Canada and Transport Canada

were restored, more than 33,000 passengers were accommodated through the coordination efforts of over a dozen airports, the airlines and Transport Canada employees, and the help and generosity of local people and various community groups. Many airports had to cope with a high number of wide-bodied jets and their passengers, all arriving over a very short time period. Gander, Newfoundland, for example, a community of only 10,000 people, accommodated 6,595 passengers from 38 flights.

Immediately after September 11, a substantial number of enhanced security features were developed and implemented in Canada, some of them even before planes returned to the sky. These were developed in coordination with US authorities (mainly the US Federal Aviation Administration) and with other government departments and agencies and key stakeholders.

### IMMEDIATE ACTIONS TAKEN AS A RESULT OF THE EVENTS OF SEPTEMBER 11, 2001 — AIR TRANSPORTATION

September 11:	Grounding of aircraft, receiving diverted flights and implementing enhanced security precautions, such as increased control of access to restricted areas and police presence.
September 12:	Resumption of domestic flights under additional security provisions for aircraft, crew and passengers (e.g. photo identification), and baggage searches and reconciliation.
September 13:	Resumption of diverted international, scheduled domestic and US flights under enhanced security provisions, including search of carry-on baggage.
September 14:	International and cargo flights resumed with additional security provisions pertaining to crew and service personnel, departures, cargo and controlled access to airports.
September 17 to 25:	Introduction of additional security precautions, (e.g. locking of cockpit doors for duration of flights and prohibition of certain objects on aircraft).
September 22:	Provision by the Government of Canada of an indemnity for third-party war and terrorism liabilities for essential aviation service operators in Canada, to help ensure uninterrupted aviation services despite international insurer's decision to no longer provide war risk liability-level coverage.
October 1:	Consolidation of all enhanced security provisions, including additional security enhancement precautions relating to air cargo, checked baggage, access control to sterile areas and to aircraft.
October 2:	Federal government announcement of a \$160 million program to compensate Canadian air carriers and specialty air operators for their losses during the closure of Canada's airspace from September 11 to September 16, 2001.

The ramifications of the events of September 11 continued beyond the weeks immediately following and beyond the North American continent. The International Civil Aviation Organization (ICAO) Assembly delegates from 187 contracting states who gathered in Montreal on September 25, 2001, dealt extensively with aviation security concerns and recognized the new urgency to enhance aviation security. In 2002, the ICAO is scheduled to endorse an action plan to strengthen aviation security and reaffirm the responsibility of all contracting states, including Canada, during a high-level ministerial conference.

## MODAL RAMIFICATIONS OF THE SEPTEMBER 11 EVENTS

Following September 11, the authority under the Marine Transportation Security Act (1994) was used to introduce a number of additional security features. Introduced by both Canadian and US authorities, the restrictions ensure that while the two countries' ships are subject to nominal interruptions, foreign vessels undergo a more detailed examination. As part of the effort, authorities increased notification requirements for vessels entering Canadian waters from 24 hours to 96 hours. The St. Lawrence Seaway Management Corporation implemented enhanced security dispositions, including risk assessment on foreign vessels and the requirement of additional pre-entry information from vessels.

Port Authorities increased security precautions. Cruise ships and associated port facilities also increased their security vigilance. Transport Canada, as the lead department for managing marine security, is working with other organizations, both domestically and internationally (including an interdepartmental working group), to assess risks and identify measures aimed at protecting Canadian ports and other critical marine infrastructure.

Surface transportation was also subject to heightened security precautions and truck border crossings experienced the most delays. The close to \$2 billion per day, two-way trade depends on quick border crossings and timely delivery.

Vehicles crossing the Canada-US border were subject to full inspection by US officials immediately after September 11. A national Road Security Team (RST), made up of Transport Canada representatives, other federal agencies with security responsibilities, and provincial and territorial representatives, was organized to address security issues related to infrastructure, drivers and vehicles. Initiatives of the RST included: liaison with

bridge and tunnel operators; coordination of federal involvement related to border delays; and review, in collaboration with its US counterparts, of security issues and development of a strategy for strengthening driver's licence security identification (to be completed by early 2002).

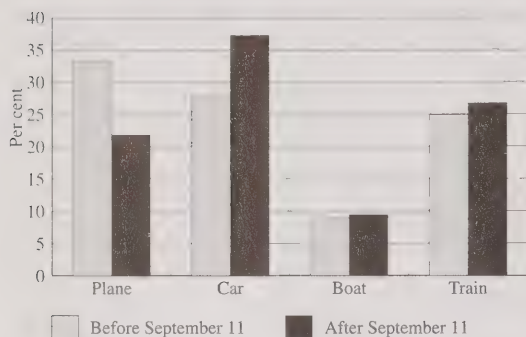
Federal and provincial transportation of dangerous goods (TDG) inspectors visited all facilities that ship and transport dangerous goods (such as chlorine or propane) and provided security awareness briefings. Provincial TDG inspectors also verified commercial drivers' licences and dangerous goods certificates during inspections on highways. The US Federal Motor Carrier Safety Administration, in collaboration with Transport Canada and designated provincial officials, held seminars in major cities across Canada for carriers moving dangerous goods to the United States. The purpose was to sensitize drivers to issues emerging from recent events, to discuss possible threats (e.g. bio-chemical terrorism, hazardous materials) and to offer recommendations. The events of September 11 amplified the need for close cooperation between Canada and the United States, and accelerated the discussion of plans and pilot projects for the application of new technologies in border security clearance programs.

## ACTIONS TO ENHANCE AND STRENGTHEN TRANSPORTATION SECURITY AND ENSURE CONTINUED PUBLIC CONFIDENCE

A comparison of public opinion surveys taken after September 11 shows public confidence in the safety and security of air travel has decreased, and public attitudes toward travel and security in general have changed. The surveys also indicated a shift in public preferences for surface transportation (car and train) over air transportation, and for domestic over foreign air travel. Figure 4-11 shows public attitudes toward and confidence in different modes of travel before and after September 11, 2001. (More information on the survey can be found at the following Web site: [www.legermarketing.com/english/set.html](http://www.legermarketing.com/english/set.html). Follow the links via Trends, Leger Marketing-Canadian Press Poll and to Canadians and Air Travel Safety, October 2001. Other survey results related to September 11 events can be found at the following Web sites: [www.angusreid.com](http://www.angusreid.com) and [www.ekos.ca/main.asp](http://www.ekos.ca/main.asp)).

In the aftermath of September 11, and in the wake of continued public and investor uncertainty, the Government of Canada has taken decisive action to enhance aviation security and the security and efficiency of Canada's borders. The Government of Canada

FIGURE 4-11: PUBLIC OPINION ON THE SAFEST MODE OF TRANSPORTATION BEFORE AND AFTER SEPTEMBER 11, 2001



Source: Leger Marketing, September 25, 2001

announced an anti-terrorism plan in October 2001, and more precise features through the federal budget tabled in the House of Commons on December 10, 2001. To cover the \$2.2 billion cost of increased air security initiatives the government announced that the purchaser of air transportation will be charged a fee effective April 1, 2002. For surface transportation, on December 12, 2001 Canada and the United States signed the Smart Border Declaration, to serve as a framework for dispositions to secure flow of people, goods and infrastructure and exchange enforcement information.

More information on what the Government of Canada is doing to help improve the safety of Canadians and the security of the Canadian transportation system can be found at <http://www.tc.gc.ca/mediaroom/terrorism/menu.htm>. This site also has links to the Federal Budget 2001 Web site and other sites with information on the fight against terrorism.

#### KEY ELEMENTS OF THE ANNOUNCED AVIATION AND BORDER SECURITY ACTIONS

- An initial investment of \$55.7 million for the purchase of advanced explosives-detection systems for deployment at priority Canadian airports. Funding of more than \$1 billion over the next five years for the purchase and deployment of new explosives-detection systems covering 99 per cent of the total air passenger traffic in Canada.
- Establishment of the Canadian Air Transport Security Authority — a new Crown corporation reporting to the Minister of Transport — to provide a number of key air security services, such as pre-boarding screening, certification of screening officers and screening contractors, deployment and maintenance of explosives-detection equipment, and aviation-related policing.
- Introduction of the *Public Safety Act*, involving 20 Acts of Parliament. This includes the *Aeronautics Act* for clarifying and strengthening the existing aviation security authorities to deter unruly passengers and to provide basic information on specific passengers on flights when it is needed for security purposes. The new aviation regulations and standards will also address restricted areas at airports, screening of people entering restricted areas, and security requirements for the design or construction of aircraft, airports and other aviation facilities.
- Funding for increased Transport Canada security functions, including the hiring of additional inspectors to provide increased oversight of aviation security.
- Funding for airlines to enhance pre-board screening and cockpit door modifications to existing aircraft; funding for airports for immediate improvements to airport screening practices and for enhanced policing and security at airports; and immediate funding for armed police on aircraft.
- Funding for increased security in maritime transport to step up measures to protect ports and other critical infrastructure from terrorist attacks.
- Provision of \$1.2 billion dedicated to border-related activities, including \$646 million to enhance border security and facilitate the flow of goods and people, and \$600 million to improve infrastructure — such as highways, commercial vehicle processing centres, and intelligent transportation systems and information-sharing technology — to support major border crossings.



*More than one third of Canada's total energy consumption is used up by transportation activities. Population and economic growth increase transportation demand.*

Societal concerns about the environment are more pronounced. Transportation, like other sectors of the economy is more and more assessed in terms of these heightened environmental expectations. Transportation is a major contributor to greenhouse gases. Its dependence on fossil fuel energy makes this sector a very important energy consuming sector within the economy.

## ENERGY

### ENERGY USE

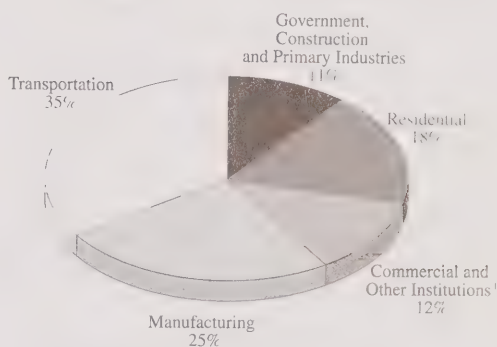
In 2000, total energy consumption in Canada was 7,178 petajoules. Transportation accounted for 34 per cent of this total. As such, this sector is the single largest energy user in Canada.

Figure 5-1 shows the distribution of energy use in the different sectors of Canada's economy in 2000.

Due to large price increases in 2000, growth in total energy consumption slowed to one per cent, compared to 1.3 per cent in 1999. In 2000, transportation energy consumption declined by 0.1 per cent, following a 2.6 per cent increase in 1999. Figure 5-2 compares the growth in transportation energy use with that of the other sectors combined and the total economy, in 1999 and 2000.

As Figure 5-3 shows, energy consumption in all sectors of the economy except transportation fluctuated somewhat during the 1990s. Energy consumption in the transportation sector grew steadily from 1990 to 1999 before falling slightly in 2000.

**FIGURE 5-1: ENERGY USE IN THE CANADIAN ECONOMY, 2000**



1 Net of transportation activities.

Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

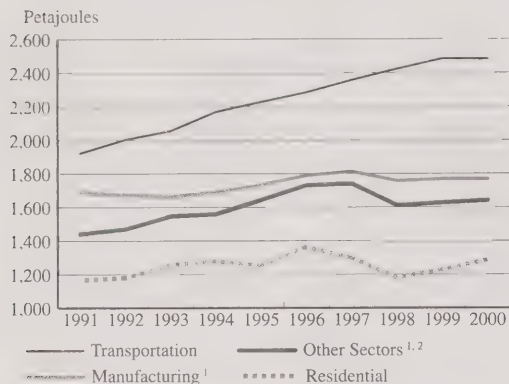
**FIGURE 5-2: PERCENTAGE GROWTH IN ENERGY USE BY MAIN SECTORS, 1999 AND 2000**



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003



**FIGURE 5-3: ENERGY USE BY ECONOMIC SECTOR, 1991 – 2000**



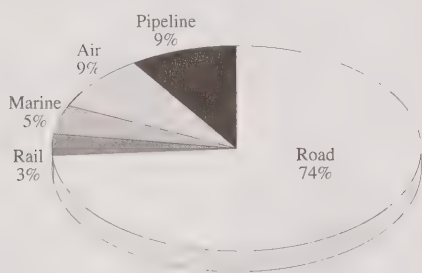
1 Net of transportation activities.

2 Includes agriculture, mining, forestry, construction, public administrations and the commercial sector.

Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

Road transportation accounts for most of the energy consumed within the transportation sector, at 74 per cent of total consumption. This is followed by pipelines and aviation at nine per cent each, marine at five per cent and rail at three per cent. Figure 5-4 shows the relative energy use of each of the transportation modes in 2000.

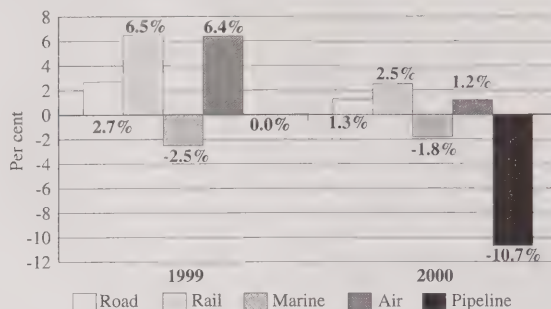
**FIGURE 5-4: ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 2000**



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

As Figure 5-5 indicates, most of the decline in transportation energy use in 2000 was in the form of an 11 per cent decline in the pipeline industry. Natural gas use by the pipeline industry fell from 245 petajoules in 1999 to 219 petajoules in 2000. Fuel consumption in the marine sector (including services related to fisheries), which had already declined by 2.5 per cent in 1999, fell by a further 1.8 per cent in 2000. All other modes increased

**FIGURE 5-5: GROWTH IN ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1999 AND 2000**



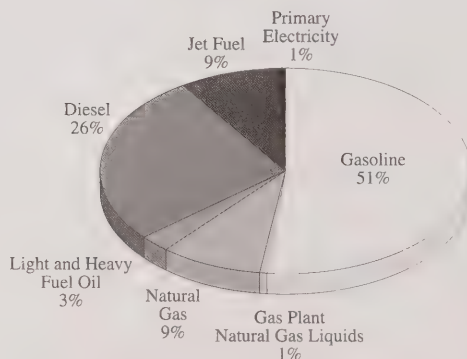
Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

their energy use in 2000, although at a lesser rate than in 1999.

The annual growth rate of energy use by the road sector (including urban transit) fell from 2.7 per cent in 1999 to 1.3 per cent in 2000. Similarly, the annual growth rate of energy use by the rail sector fell from 6.5 per cent in 1999 to 2.5 per cent in 2000. In the air sector, this growth rate stood at 6.4 per cent and 1.2 per cent, respectively, over the same two years. Figure 5-5 compares growth levels in energy use by transportation mode in 1999 and 2000.

In terms of energy type, motor and aviation gasoline represented just over half the energy consumed by the transportation sector in 2000. Diesel fuel (road, rail and marine) was the second largest type of energy consumed, at 26 per cent of transportation's total, followed by natural gas and jet fuel, at nine per cent each.

**FIGURE 5-6: ENERGY USE IN THE TRANSPORTATION SECTOR BY SOURCE, 2000**

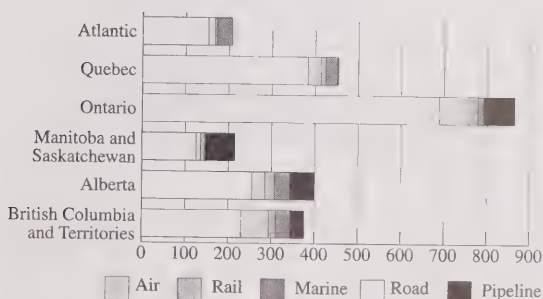


Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

Figure 5-6 shows the different types of energy and relative amount consumed in the transportation sector in 2000.

Figure 5-7 compares energy purchases by transportation in each region in Canada in 2000. Ontario, by far, consumed the largest share of transportation energy, with 865 petajoules, or 35 per cent of the Canadian total. Quebec was second, with 454 petajoules (18 per cent of the sectoral total), followed by British Columbia with 370 petajoules (15 per cent) and Alberta with 363 petajoules (15 per cent). Manitoba and Saskatchewan represent 3.6 per cent and five per cent of transportation's domestic energy consumption, respectively, for a combined total of 215 petajoules. The Atlantic region consumed 205 petajoules, or eight per cent of the total domestic energy consumed by transportation in 2000.

**FIGURE 5-7: TRANSPORTATION ENERGY PURCHASES BY REGION IN PETAJOULES, 2000**



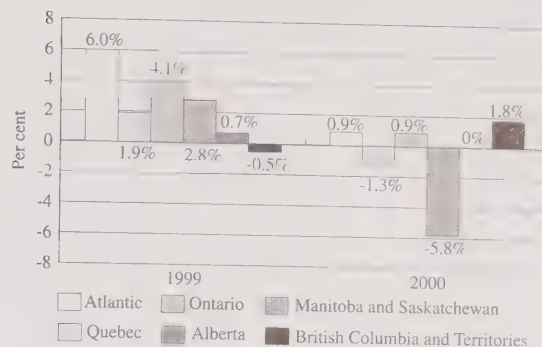
Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

In most regions, the annual growth in transportation energy consumption was lower in 2000 than in 1999. In both Atlantic Canada and Ontario, the annual increase fell from six per cent and 4.1 per cent, respectively, in 1999 to less than one per cent in 2000. In Quebec, energy consumption had grown by 1.9 per cent in 1999, but fell by 1.3 per cent in 2000, remaining slightly above its 1998 level of 454 petajoules. Manitoba and Saskatchewan, which had a combined growth of 2.8 per cent in 1999, showed a decline of 5.8 per cent in 2000. Consumption in Alberta remained stable in 2000. Only British Columbia and the territories went from a slight decline in 1999 to a 1.8 per cent increase in 2000.

Figure 5-8 compares transportation energy use by region in 1999 and 2000.

Because road transportation is such an important part of transportation energy consumption, the patterns shown

**FIGURE 5-8: GROWTH IN TRANSPORTATION ENERGY USE BY REGION, 1999 AND 2000**

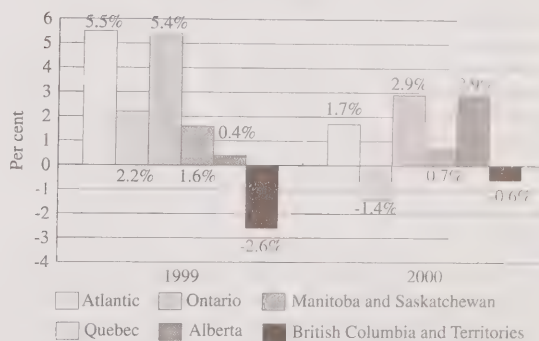


Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

in Figure 5-9 reflect, for most Canadian regions, annual changes in road energy use. The three Prairie provinces were exceptions, due largely to the significant drop in natural gas used by pipelines, which accounted for their reduction in energy consumption by transportation reported in 2000.

Figure 5-9 compares the annual growth in energy consumption by the road mode for each region in Canada in 1999 and 2000.

**FIGURE 5-9: GROWTH IN ROAD ENERGY CONSUMPTION BY REGION, 1999 AND 2000**



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

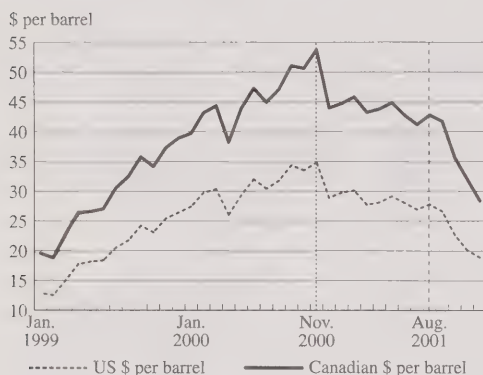
According to preliminary data, transportation energy consumption declined further in 2001. Gasoline consumption increased by 1.4 per cent, boosted by lower prices. Sales of diesel, however, declined by 2.7 per cent, a result of both the downturn in the US economy which affected transborder trucking activities, and the lower GDP growth in Canada. Finally, jet fuel sales in Canada dropped seven per cent in 2001, due to both the US

economic downturn, which affected transborder activities, and the effects of September 11 on the aviation sector as a whole.

## FUEL PRICES

The price of crude oil rose sharply in 1999 and 2000. As Figure 5-10 shows, the price of West Texas Intermediate (WTI) rose from US \$12.53 per barrel in February 1999 to US \$34.84 in November 2000, an overall increase of 178 per cent. In Canadian dollar terms, the price of WTI rose from \$18.79 to \$53.73 per barrel, an increase of 186 per cent, because of the decline of the Canadian dollar vis-à-vis US currency. Then, in December 2000, the price fell by almost \$6 US to \$34.84 per barrel. From January to August 2001, WTI hovered between \$26 and US \$30 (\$41 to \$45 Canadian per barrel).

**FIGURE 5-10: MONTHLY CRUDE OIL PRICES – WEST TEXAS INTERMEDIATE IN CHICAGO, NYMEX PRICES, 1999 TO 2001**



Source: M. J. Ervin & Associates

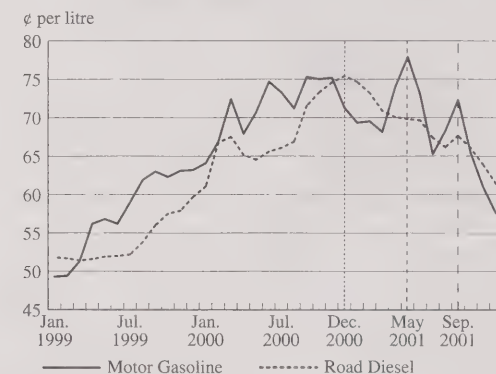
The events of September 11 did not lead to increased oil prices. Two major factors explain this. First, the economic slowdown in most industrialized countries meant that the demand for oil and petroleum products was low, which put downward pressure on prices. Second, the failure of oil producers to agree on significant cuts in oil production created a market in which supply greatly exceeded demand. As a result, crude oil prices dropped in the last part of 2001, from almost US \$28 per barrel in August to less than US \$19 in December (or from \$43 to \$28 Canadian per barrel).

Changes in the retail price of diesel more or less followed those of crude oil. The price at the pump rose

from an average of 51.8 cents per litre in February 1999 to 75.4 cents in December 2000, for an overall 46 per cent increase. It has fallen steadily since then, reaching 61.4 cents per litre in December 2001. Gasoline prices tend to be more volatile than diesel prices because the retail market for motor gasoline is more competitive. Between January 1999 and May 2001, the average price of gasoline at the pump increased by 58 per cent, from 49.3 to 77.9 cents Canadian per litre, with odd temporary decreases in monthly average prices. In July, it fell to 65.2 cents before rebounding to 72.3 cents in September. Since then, it has declined steadily, reaching 57.6 cents per litre in December 2001.

Figure 5-11 shows monthly variations in the cost of transportation fuels from 1999 to 2001, as represented by the retail price of motor gasoline and road diesel.

**FIGURE 5-11: MONTHLY RETAIL PRICES OF ROAD FUELS, 1999 TO 2001**



Source: M. J. Ervin & Associates

Gasoline and diesel prices do not vary as quickly as crude oil prices because they are made up of a number of elements, not all of which are related to the price of crude oil. The price of fuel includes federal excise taxes and provincial motive fuel taxes, whose values are preset. Federal taxes are currently set at ten cents per litre for motor gasoline, 11 cents for (leaded) aviation gasoline and four cents per litre for other transportation fuels, including diesel. Provincial fuel taxes currently average 13.3 cents per litre for both diesel and gasoline.

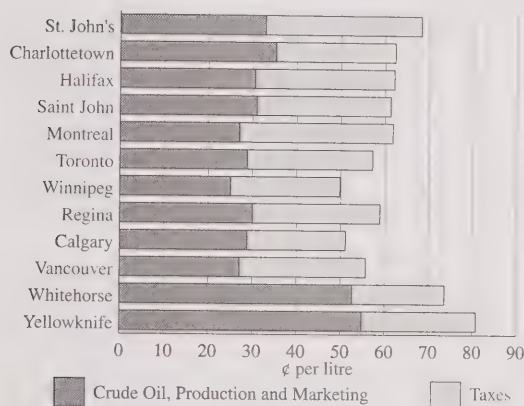
In 2001, Whitehorse and Yellowknife had the highest prices for motor gasoline, at 73.7 and 80.8 cents per litre, respectively. Winnipeg and Calgary had the lowest prices, at 49.8 and 51.2 cents per litre, respectively. Total taxes include the Goods and Services Tax (GST) and provincial sales tax (PST), where applicable. Whitehorse (21 cents per litre) and Calgary (22.3 cents) had the lowest level of



taxes applied to gasoline, while St. John's (35.4) and Montreal (34.8) had the highest taxes. The tax figure for Montreal includes an "urban tax" of 1.5 cents per litre that does not apply to the rest of the province of Quebec. Vancouver and Victoria which is not shown in Figure 5-12 were the only other cities to have a special tax, at four cents and 2.5 cents per litre, respectively. The revenues generated are used for public transportation initiatives. Figure 5-12 shows the retail price of motor gasoline by city in December, 2001.

**FIGURE 5-12: RETAIL PRICE OF MOTOR GASOLINE BY CITY**

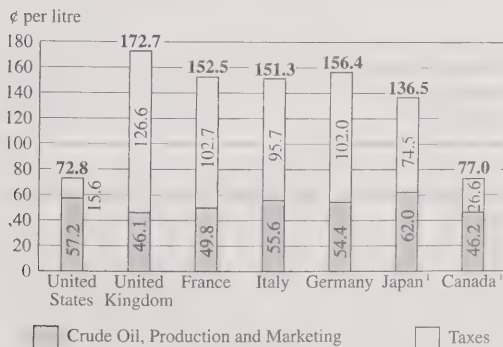
(Averages for December 2001)



Source: M. J. Ervin & Associates

As Figure 5-13 shows, gasoline prices in Canada are much lower than prices in selected overseas countries, but slightly higher than in the United States. While prices

**FIGURE 5-13: INTERNATIONAL PRICE OF MOTOR GASOLINE, MAY 2001**



<sup>1</sup> Indicates regular unleaded gasoline, other prices and taxes apply to premium unleaded.

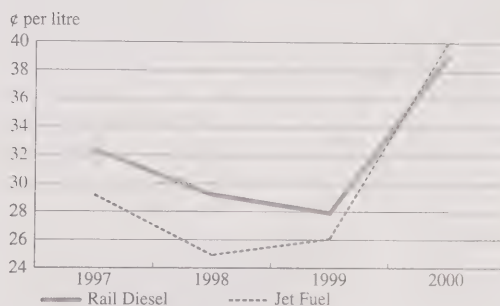
Source: M. J. Ervin & Associates

before taxes are of the same order of magnitude in the seven countries shown, taxes differ strongly between Europe and Japan on the one hand, and North America on the other. Fuel and sales taxes are about 70 per cent higher in Canada than in the United States, but they bear no comparison with taxes levied in the other countries.

Information available on fuel prices for off-road transportation modes is not as detailed or as timely as that for motor gasoline and road diesel. Figure 5-14 presents the average cost of rail diesel and aviation jet (turbo) fuel paid by carriers from 1997 to 2000. These costs, especially for aviation, also include the costs related to fuel purchased outside Canada.

Both modes show spectacular increases in their respective fuel average costs in 2000. Rail diesel jumped by 40 per cent, from 27.9 cents to 39 cents per litre. The increase was even steeper for the aviation sector: the average cost of fuel went from 26.1 cents per litre in 1999 to 40 cents in 2000, for a 53 per cent increase.

**FIGURE 5-14: ANNUAL AVERAGE PRICES OF RAIL DIESEL AND JET FUEL, 1997 – 2000**



Source: Transport Canada

Due to limitations in available data, it was not possible to perform an analysis of fuel prices for marine transportation.



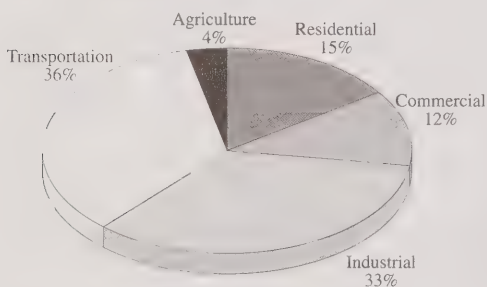
## TRANSPORTATION'S ENVIRONMENTAL IMPACT

Transportation allows the free movement of people and goods, which is vital to the nation's economy and general well-being. But transportation also has an impact on the environment; with increased mobility come the problems of climate change, smog and acid rain. The challenge for the transportation sector is to find a balance between its positive and negative effects.

Climate change is a formidable environmental challenge, and one to which transportation contributes a large part. It is caused by active compounds commonly called greenhouse gases (GHGs). These gases trap heat in the lower atmosphere that has been reflected from the surface of the planet. Carbon dioxide (CO<sub>2</sub>) is the primary GHG, and it is responsible for about two thirds of anthropogenic, or human induced, climate change.

Figure 5-15 shows that GHG emissions from Canada's transportation sector accounted for 36 per cent (161.6 megatonnes of CO<sub>2</sub> equivalent) of total emissions from secondary energy use<sup>1</sup> in 1999. That same year, road transportation accounted for almost 77 per cent of total transportation-related GHGs, followed by aviation, 10.3 per cent, and rail and marine combined, at just less than 9.5 per cent.

FIGURE 5-15: TRANSPORTATION GREENHOUSE GASES, 1999



Source: Natural Resources Canada, Energy Efficiency Trends – Summary Tables (Canada), Office of Energy Efficiency (OEE) Web site

Fossil fuel use in the transportation sector is also cause for concern. Smog in many of Canada's most densely populated areas — and its ill effects on people's health — is a good example. The two main factors contributing to smog are ground-level ozone and fine airborne particles, called particulate matter (PM). Ground-level ozone is

composed primarily of nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC). The transportation sector accounts for roughly 20 per cent of Canada's VOC emissions, over 50 per cent of NO<sub>x</sub> emissions, and a significant amount of fine particulates. Because of its high levels of NO<sub>x</sub> emissions, the transportation sector is also associated with acid rain. (The transportation sector emits the other primary contributor to acid rain, sulphur dioxide (SO<sub>2</sub>), in relatively small quantities.)

Other transportation-related environmental concerns include water and noise pollution, as well as impacts on land use and urban design. Urban congestion affects the competitiveness of the Canadian economy and affects many people's quality of life. It also results in greater fuel consumption and additional emissions of air pollutants and GHGs, which in turn aggravate human health problems, such as stress and asthma. Other activities also have some impact on the environment, such as the construction, operation and maintenance of transportation infrastructure; the production and disposal of vehicles; and the extraction, refining and distribution of fossil fuels used in transportation activities.

## TRENDS IN TRANSPORT — PRESSURE POINTS

Like other sectors, transportation faces long-term pressure from population and economic growth. These two factors will likely increase demand for energy and products that consume energy, as well as their associated environmental consequences.

International trade has always been important to the Canadian economy, and this importance is expected to continue and grow in the future. International trade, however, also increases the demand for transportation and has a direct effect on energy use. Consequently, it also has a direct effect on emissions.

By 2020, total transportation demand could be more than 50 per cent higher than it was in 1990. Most of this growth is expected to come from private vehicles, trucking and aviation.<sup>2</sup>

Given these projected trends and their anticipated environmental consequences, Transport Canada is implementing a number of initiatives throughout the department. These initiatives are part of Transport Canada's *Sustainable Development Strategy 2001–2003* (SDS), its plan for making better environmental decisions

1 Transportation emissions accounted for a smaller share (~25%) of total GHG emissions from all sources of energy (primary energy). Primary energy includes emissions from final end use, non-combustion uses of energy, electricity generation, and oil and gas production.

2 There is uncertainty in the growth of the air freight industry due to the events of September 11, 2001.

in partnership with key sector stakeholders and for continuing the journey toward a more sustainable transportation system.

The Strategy was tabled in Parliament in February 2001 and contains seven priority challenges and 29 specific commitments for action. New initiatives in the SDS focus on air and water pollution, urban transportation, advanced technology vehicles, climate change, research and development in Intelligent Transportation Systems, sustainable transportation indicators, strategic environmental assessment, data improvement and modal integration.

## CANADA'S CLIMATE CHANGE AGENDA

In December 1997, Canada and other developed countries negotiated the Kyoto Protocol to the United Nations Framework Convention on Climate Change. The Protocol commits Canada to reducing its GHG emissions to six per cent below 1990 levels during the five-year period of 2008 to 2012.

Early in 2001, the Protocol seemed threatened on a number of fronts. The parties appeared deadlocked on a number of key issues, casting into doubt the prospects for implementation by 2002 and even the future of the agreement itself. The Kyoto Protocol suffered another setback when the newly elected administration in the United States, the world's largest emitter of GHGs, announced its withdrawal from the agreement.

However, negotiators met in Bonn, Germany, in July 2001, and were able to reach an agreement acceptable to all parties. The process continued in Marrakech, Morocco, during the fall of 2001, and experts finalized many of the important details that will allow the ratification process to begin.

Compromises reached at Bonn and Marrakech centred on a few key issues: flexible mechanisms, sinks and compliance. The Protocol contains mechanisms — emissions trading, joint implementation and clean development — designed to enable signatories to make their reductions in the ways that are most cost-effective for them. At Bonn and Marrakech, Canadian negotiators were instrumental in establishing rules for the use of these mechanisms acceptable for the Canadian economy. At Bonn, negotiators established which sinks would be recognized and how sinks credits would be counted. And at Bonn and Marrakech, negotiators established the outline for a compliance regime, determining what should happen if a country fails to meet its promised targets.

### ACTION ON TRANSPORTATION: AN UPDATE

Canada's response to climate change includes two elements: the *National Implementation Strategy* and the *First National Business Plan on Climate Change*. These focus on reducing national GHG emissions and developing strategies to adapt to a changing environment. They also reflect a fundamental agreement among federal, provincial and territorial governments about the need to act now toward a clear, common purpose.

The Government of Canada's contribution to the Business Plan was announced in Action Plan 2000 on Climate Change. This plan will reduce Canada's greenhouse gas emissions by 65 megatonnes per year from 2008 to 2012, taking us just over one quarter of the way to our Kyoto target.

All five elements of Action Plan 2000 are being implemented. These include:

**Freight Efficiency and Technology Initiative** — This element comprises three components: the Freight Sustainability Program (a contribution program); performance agreements between the federal government and transport industry associations; and a training and awareness program. Total funding for this initiative is \$14 million.

**Canadian Transportation Fuel Cell Alliance** — This alliance is intended to demonstrate and evaluate different fuelling options for fuel cell vehicles. A core committee and five working groups have been established to finalize operational procedures and address issues. A communications strategy is being developed and a memorandum of understanding (MOU) has been signed with the California Air Resources Board for collaborative activities and information exchange, including the California Fuel Cell Partnership. Total funding for this initiative is \$23 million.

**Future Fuels Program** — This program intends to facilitate a contingent loan program managed by the Farm Credit Corporation. Over the medium term, the program is expected to increase ethanol production by five times the current level. Total funding for this initiative is \$3 million.

**Motor Vehicle Fuel Efficiency Initiative** — This initiative includes voluntary agreements with vehicle manufacturers to achieve a significant improvement in new light-duty vehicle fuel efficiency, consumer campaigns, monitoring compliance, and testing and demonstrating advanced-technology vehicles. Total funding for this initiative is \$16 million.

**Urban Transportation Showcase Program** — This program will provide funding over five years to enable Canadian communities to create showcases that demonstrate and evaluate ways of reducing GHG emissions from urban transportation. The program has been designed to respond to a range of urban transportation challenges, including reducing GHG emissions and addressing air quality, congestion and safety. It will also complement and support efforts to improve transportation infrastructure in urban areas. Transport Canada is holding a nationwide competitive process to select several showcases that optimize the use of transportation infrastructure and adopt best technologies and strategies. Total funding for this initiative is \$40 million.

### CLIMATE CHANGE IMPACTS AND NORTHERN TRANSPORTATION

Canada's *First National Business Plan on Climate Change* includes a key objective for the transport sector: "to improve the understanding of how climate change could affect Canada's transportation systems, particularly in the North, coastal regions, marine, and shipping on the Great Lakes and the St. Lawrence."

Transport Canada is working with the Government of the Northwest Territories and with Natural Resources Canada to develop a comprehensive and systematic approach that identifies and addresses the potential impact of climate change on northern transportation. While the project would be carried out in the Northwest Territories, the approach, once it is developed, could be used by other governments to assess and respond to the impact of climate change on transportation in their areas.

## CLEAN AIR INITIATIVES

In April 2001, Environment Canada released the *Interim Plan on Particulate Matter and Ozone*. This plan outlines the federal government's activities on reducing air pollutants; the science behind policy decisions to protect the health of Canadians from toxic air pollutants; clean air activities; and programs to encourage Canadians to take action at home and in their communities. Because it regulates aviation, rail and marine transportation, Transport Canada was a key contributor to the plan. More information is available on Environment Canada's Web site at [http://www.ec.gc.ca/air/new\\_e.shtml](http://www.ec.gc.ca/air/new_e.shtml).

When they signed the *Canada-wide Standards for Particulate Matter (PM) and Ozone* in June 2000, federal, provincial and territorial governments committed themselves to preparing and making public their implementation plans for actions to reduce emissions of fine particulate matter (PM<sub>2.5</sub>) and ozone by 2010. The Government of Canada's Interim Plan follows through on this commitment.

Federal commitments include negotiating and signing the Ozone Annex to reduce transboundary ozone emissions; putting in place a 10-year action plan for cleaner vehicles, engines and fuels; and improving the national monitoring and reporting system on air pollutants.

In June 2001, community, industry and government leaders from around the world met in Toronto at the second Smog Summit to explore solutions to smog. At the same time, Canadian federal, provincial and municipal governments signed an intergovernmental declaration committing themselves to the establishment of a Greater Toronto Area (GTA) Clean Air Council to address emissions causing smog and climate change. A

### THE GREATER TORONTO AREA CLEAN AIR COUNCIL

The Greater Toronto Area Clean Air Council (GTA-CAC) is an intergovernmental working group dedicated to exploring joint initiatives and to liaising with municipalities across Canada to discover best practices for reducing smog. The GTA-CAC is made up of partners from the Canadian federal and Ontario provincial governments, along with various regions, municipalities and towns in the Greater Toronto Area.

Its mission is to:

- convene all levels of government, corporations, non-governmental organizations and members of the general public in the Greater Toronto Area;
- explore opportunities for joint initiatives to reduce air pollution in the GTA and the associated health risks;
- liaise with other municipalities across Canada through the Federation of Canadian Municipalities (FCM) to share information about best practices for reducing smog;
- extend partnership in the Council to all levels of government — federal, provincial and municipal — including all 29 cities, towns and regions in the GTA; and
- follow up on key issues identified at annual smog summits and help establish a series of ongoing summits.

community conference was also held at Metro City Hall, bringing together 400 leaders to share best practices and inspire action. And an international declaration was signed by 16 cities from Europe, America and Africa, calling for governments around the world to reduce their GHG emissions by 50 per cent.

Transport Minister, David Collenette attended the Smog Summit with his colleagues from Environment Canada and Natural Resources Canada. In addition to the previously mentioned Urban Transportation Showcase, Minister Collenette made a number of announcements about actions that will contribute to cleaner air for Canadians.

- VIA Rail has been asked to prepare a commuter strategy for the Greater Toronto and Montreal areas to complement the services offered by GO Transit and l'Agence métropolitaine de transport.
- Almost \$30 million has been allocated over five years to fund the development, integration and deployment of Intelligent Transportation Systems (ITS) across Canada. The funds are provided under the Strategic Highway Infrastructure Program announced on April 3, 2001. ITS includes applications such as advanced systems for traveller information, traffic management, public transport, commercial vehicle operations, emergency response management and vehicle safety.
- Recent amendments to the Motor Vehicle Safety Regulations establish a safety standard for the protection of occupants in electric vehicles and



### TRANSPORT CANADA'S ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

Transport Canada's Environmental Management System focuses on reducing the environmental impacts of the department's physical operations. In the past year, Transport Canada has implemented an environmental monitoring program and a plan to reduce GHG emissions.

#### Environmental Monitoring Program

Most of Transport Canada's landholdings are leased to third-party operations. Transport Canada launched a program in 2000/01 to monitor the environmental impacts of transportation operations on these lands and how the tenants are responding to them. Protocols under the monitoring program include property, compliance, conformance, quality assurance and environmental management.

#### Federal House in Order

As part of the Federal House in Order initiative, the Government of Canada committed to reduce GHG emissions from its operations by 31 per cent from 1990 levels by 2008–2012. Transport Canada has adopted a share of this target based on the emissions baseline of its own operations. Table 5-1 outlines the emissions from Transport Canada activities.

**TABLE 5-1: EMISSIONS FROM TRANSPORT CANADA ACTIVITIES**

	(Kilograms of CO <sub>2</sub> equivalent)		
	1998/99	1999/2000	2000/01 <sup>1</sup>
Fleet	46 700	42 100	36 900
Buildings	23 600	21 400	11 700
<b>Total</b>	<b>70 300</b>	<b>63 500</b>	<b>48 600</b>

<sup>1</sup> The majority of the reduction in 2000/01 are due to divestiture of operations.

Source: Transport Canada

Transport Canada's GHG reduction strategy outlines alternative fuel purchasing for the department's motor vehicle fleet and efficiency improvements for the marine vessel fleet as two targets.

### THE ADVANCED TECHNOLOGY VEHICLES PROGRAM

Under the Advanced Technology Vehicles Program (ATVP), available or soon to be available advanced vehicles and technologies from around the world are being assessed to determine their impact on safety, energy efficiency and the environment. The sustainability of Canada's transportation system relies on the reduction of air pollutants from transportation sources and the development of cleaner transportation systems, practices and technologies. Vehicles with advanced powertrains, materials, chassis designs, emission controls, fuels and other technologies are poised for introduction over the next decade. The ATVP will ensure that Transport Canada is ready to match the pace of technological change with programs that facilitate the introduction and use of clean, safe and efficient advanced technology vehicles.

harmonize the Canadian requirements with those of the United States. An electric vehicle is defined as any vehicle that uses batteries to provide electricity to power an electric motor. As with all motor vehicles in Canada, manufacturers must certify electric vehicles to conform to the safety standards outlined under the *Motor Vehicle Safety Act*. The amendment puts in place a series of crash tests designed to protect occupants from the hazards unique to electric vehicles, such as electric shock, electrolyte spills from batteries, and the potential injury arising from the battery assembly entering the passenger compartment. The new standard applies to electric passenger cars, multi-purpose passenger vehicles, trucks and buses.

## PUBLIC AWARENESS AND BEHAVIOURAL CHANGE

In the 1998 federal budget, the Government of Canada allocated \$150 million over three years to establish the Climate Change Action Fund (CCAF) to help Canada meet its commitments under the Kyoto Protocol. The federal budget of 2000 extended the CCAF for three more years with \$50 million per year in funding. The public education and outreach component of the CCAF will continue to build on its past success but with a more targeted investment approach. Public education and outreach activities will target action in municipalities and communities, and with youth, educators, businesses, industry and the general public. In 2001, the communities stream issued one call for proposals that included transportation-related projects. As a result, the public education and outreach component of the CCAF committed to funding approximately \$200,000 for community-based transportation projects.

In the December 2001 federal budget, Finance Minister Paul Martin announced that funding for both the \$25-million Green Municipal Enabling Fund and the \$100-million Green Municipal Investment Fund would be doubled. Both programs are designed to help municipalities address environmental challenges. Launched in 2000 and administered by the Federation of Canadian Municipalities, these initiatives have been effective in stimulating community-based feasibility work and investments in more than 100 projects aimed at improving the environment at the local level. Projects involving a wide range of partners are under way across the country in such areas as energy and water savings, community energy systems, urban transit, waste diversion and renewable energy.



**MOVING ON SUSTAINABLE TRANSPORTATION PROGRAM**

The Moving On Sustainable Transportation (MOST) program assists non-governmental organizations in conducting projects that promote an awareness of sustainable transportation issues. The first phase of the program was launched in September 1999 and expires March 31, 2002. In Transport Canada's *Sustainable Development Strategy 2001–2003*, a commitment was made to extend MOST for an additional two years and increase resources allocated to the program. In January 2002, Transport Canada announced the extension of the program for an additional five years and \$2.5 million.

Over the course of MOST, Transport Canada committed approximately \$900,000 to support 26 initiatives. Funded projects include the Forest Engineering Research Institute of Canada's (FERIC) research project to reduce GHG emissions from forestry hauling operations; Better Environmentally Sound Transportation's organization of Canada's first national transportation demand management conference; and Green & Gold Inc.'s education and awareness campaign, entitled Clean Air Champions, to encourage youth in urban centres to incorporate active transportation, such as walking, biking and in-line skating, into their daily lives.

At its ninth session in the spring of 2001, the United Nations Commission on Sustainable Development reviewed progress by member countries on sustainable energy development and transportation systems as outlined in Agenda 21. Canada produced a monograph that described the state of transportation in Canada as it related to sustainable development and discussed the nature of the challenges that Canada faces and the actions being taken to address them. The key to sustainable development in Canada was identified as better integration of economic, social and environmental considerations into decisions affecting transportation activity.

**HIGHWAY DE-ICING AND ANTI-ICING**

Two main factors have prompted the road maintenance industry to develop ways to better manage the use of salt on roads. The first is environmental concerns about the potential for salt contamination in soil, groundwater and other environmentally sensitive areas; the second is the possibility that Environment Canada may add road salt to the list of toxic substances.

As a result, Maritime Road Development Corporation (MRDC) maintains a new four-lane highway from Fredericton to Moncton in New Brunswick, which is using the latest technology to minimize the amount of salt used during winter road maintenance, while maximizing its effect.

**CANADA TRANSPORTATION ACT  
REVIEW AND ENVIRONMENTAL IMPACT**

The panel appointed to conduct a comprehensive review of the *Canada Transportation Act* (CTA) submitted its report to the Minister of Transport in June 2001. The report, released publicly, contains a number of recommendations relating to the environmental impact of transport activities, including suggestions that:

- transit operating agencies and their funding sources seek the most cost-effective ways of improving their services;
- experimentation with innovative forms of service (smaller vehicles, shared taxis) be encouraged;
- urban transit be permitted to qualify for funding from road user charges;
- payments to transit authorities be made on the basis of their actual performance in inducing shifts from private automobile use to transit; and
- the statement of objectives of national transportation policy in the *Canada Transportation Act* recognizes the environmental goals of national policy.

Specifically, it is using two methods to apply salt to the Fredericton–Moncton link. Under certain weather and road conditions, both of these methods have proven to be effective, while dramatically reducing the amount of salt used to achieve highway safety.

The first method is to apply pre-wetted salt. Pre-wetted salt is extremely effective when the temperature ranges from 0°C to -10°C because the salt adheres to the road surface. This allows it to do a better job and prevents it from bouncing off the road into ditches, where it may result in additional salt contamination.

The second method is to use a liquid salt brine as an anti-icing approach. The brine is sprayed onto the road just before a winter storm to prevent snow and ice from bonding to the road surface. This preventive approach requires much less salt than would be needed to break a bond already formed.

For more information, visit MRDC's Web site at <http://www.mrdc.ca>.

# TRANSPORTATION AND EMPLOYMENT

# 6

*One of the repercussions of the economic slowdown on the transportation industry was a less significant growth in transport employment levels in 2001 than in previous years.*

The transportation sector has accounted for more than 800,000 full-time jobs since 1998. Preliminary figures for 2001 show signs of a weaker growth in employment over the previous years.

## WORKFORCE

The economic slowdown experienced in North America during 2001, along with the events of September 11, had a noticeable impact on total employment in Canada. Although the number of Canadians working full-time went up by 1.1 per cent, this increase was less than half the average annual growth rate recorded over the last five years. The transportation sector also displayed a weaker growth rate in overall employment levels in 2001 as a consequence of the slowdown and September 11 events.

This weakened North American economy induced a decline in aviation activity and put some air carriers in a precarious financial situation. The terrorist attacks of September 11 forced airlines to suspend their operations for several days and to further reduce their capacity as demand declined abruptly. Revenue drops led Air Canada to cut back 6,600 employees. Canada 3000, already in a weak financial situation prior to September 11, terminated its service in November, putting more than 1,500 people out of work.

Employment at Canadian airports was almost unaffected by the economic slowdown and the events of September 11. Only one airport confirmed that part of its personnel reduction was related to these events. NAV Canada implemented cost reduction strategies in order to avoid layoffs. In the rail, marine and trucking sectors, no conclusions could be drawn from the available data.

## DATA GAPS

The actual number of employees working in the transportation sector is likely to be underestimated in the figures reported in this chapter. This is due to the absence of detailed information, the lack of data in certain segments of the transport industry, or confidentiality issues.<sup>1,2</sup>

This chapter covers full-time employment in the transportation sector and associated services. The chapter is divided into two sections. The first one pertains to full-time employment information for the different segments of the transportation sector. The second section looks at average salaries by transportation mode<sup>3</sup>.

Table 6-1 shows employment in the transportation sector from 1998 to 2001.

- <sup>1</sup> **North American Industrial Classification System (NAICS):** Starting in January 2001, Statistics Canada is publishing the data tabulations for the *Survey of Employment, Payrolls and Hours (SEPH)* based upon Canadian industries classified in accordance with a new North American Industrial Classification System (NAICS). The NAICS-based estimates are not comparable to the previously published estimates based upon the Standard Industrial Classification (SIC) of 1980. This explains the differences in historical time series in comparison to information reported in previous editions of the annual report.
- <sup>2</sup> Confidentiality issues dictate the level of disaggregation of the provincial employment data presented in this chapter. It varies from one segment of the transportation sector to the other.
- <sup>3</sup> Data on labour actions in the transport sector is available in the addendum to the 2001 Annual Report on Transport Canada's Web site at [www.tc.gc.ca/pol/en/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts3/Transportation_Annual_Report.htm).

TABLE 6-1: EMPLOYMENT IN THE TRANSPORT SECTOR,  
1998 – 2001

	(Thousands of workers)			
	1998	1999	2000	2001 <sup>1</sup>
<b>Transport Services/Infrastructure</b>				
Air <sup>A</sup>	79.6	84.0	85.9	82.8
Marine <sup>B</sup>	22.0	23.2	24.4	26.7
Rail <sup>C</sup>	45.1	43.2	40.9	40.9
Truck <sup>D</sup>	310.1	314.4	320.0 <sup>E</sup>	N/A
Bus/Urban Transit <sup>E</sup>	62.9	64.1	66.0	67.0
Taxi <sup>F</sup>	12.4	12.0	13.5	14.4
Highways <sup>G</sup>	69.5	69.6	69.6	69.6
Other <sup>H</sup>	67.7	71.1	73.3	74.8
<b>Total</b>	<b>669.3</b>	<b>681.6</b>	<b>693.6</b>	<b>N/A</b>
<b>Government Services<sup>1</sup></b>	<b>28.5</b>	<b>28.4</b>	<b>28.1</b>	<b>27.9</b>
<b>Associated Services</b>				
Air <sup>I</sup>	39.4	40.1	41.5	42.8
Marine <sup>K</sup>	5.4	5.4	5.4	5.3
Other <sup>L</sup>	54.6	56.2	57.8	57.8
<b>Total</b>	<b>99.4</b>	<b>101.7</b>	<b>104.7</b>	<b>105.8</b>
<b>Grand Total<sup>2</sup></b>	<b>797.2</b>	<b>811.7</b>	<b>826.4</b>	<b>N/A</b>

Notes: Due to confidential data that has only been included in Totals or the Grand Total, the individual sections do not necessarily add to the sums shown in the table.

N/A: not available

1 Transport Canada estimate

2 Excludes part-time employees.

#### Sources:

A 2001 based on 11 months of averaged annual data. Statistics Canada Survey of Employment, Payrolls and Hours (SEPH) based on North American Industrial Classification System (NAICS). Cat. 72-002; Canadian Airport Authorities; Local Airport Authorities; Transport Canada.

B Statistics Canada, SEPH, 2001 based on 11 months of averaged annual data; St. Lawrence Seaway Management Corporation; Canadian Port Authorities.

C Transport Canada estimates based on Statistics Canada, Rail in Canada, Cat. 52-216.

D Statistics Canada, Trucking in Canada, Cat. 53-222, SEPH; Transport Canada for some years.

E Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215; Transport Canada.

F Statistics Canada, SEPH, 2001 based on 11 months of averaged annual data.

G Transport Canada estimates based on 1996 Census data.

H Public Transit residual; other transportation residual; Pipeline Transportation, SEPH.

I Government Estimates, Transport Canada estimates for provincial and territorial employment.

J Statistics Canada, SEPH - Travel Arrangement and Reservation Services, 2001 based on 11 months of averaged annual data.

K Pilotage Authorities; British Columbia Maritime Employers Association; Maritime Employers Association.

L Insurance Bureau of Canada; Census.

## RAIL

For a number of years, employment in the rail industry has shown a downward trend. In 2000, the number of employees working for Canadian railways declined by 5.3 per cent, mainly due to personnel reductions by Class I carriers in equipment and road maintenance occupations.

Table 6-2 shows the level of employment in the rail industry from 1998 to 2000.

TABLE 6-2: EMPLOYMENT IN THE RAIL INDUSTRY,  
1998 – 2000

	Total <sup>1</sup>	Class I	Class II and III <sup>2</sup>
<b>1998</b>			
General	7,832	7,123	709
Transportation	16,809	14,708	2,101
Equipment Maintenance	9,877	8,774	1,103
Road Maintenance	10,543	9,010	1,533
<b>Total</b>	<b>45,061</b>	<b>39,615</b>	<b>5,446</b>
<b>1999</b>			
General	8,026	7,286	740
Transportation	15,808	13,728	2,080
Equipment Maintenance	9,598	8,485	1,113
Road Maintenance	9,776	8,260	1,516
<b>Total</b>	<b>43,208</b>	<b>37,759</b>	<b>5,449</b>
<b>2000</b>			
General	7,325	6,650	675
Transportation	15,606	13,466	2,140
Equipment Maintenance	8,669	7,564	1,105
Road Maintenance	9,337	7,742	1,595
<b>Total</b>	<b>40,937</b>	<b>35,422</b>	<b>5,515</b>

1 Total rail employment limited to carrier personnel (does not include incidental rail services).

2 Data may be understated due to exclusion of an estimation of a number of smaller Class III railways and some Class II railways that did not report their employment information.

Source: Statistics Canada, Rail in Canada, Cat. 52-216

## ROAD

The following section looks at employment in the bus and trucking industries, as well as taxi and limousine services.

## Bus

In 2000, the number of full-time employees working in the bus industry increased by three per cent. School bus operators had the strongest growth, with an increase of 5.7 per cent.

Table 6-3 shows the total number of full-time employees working in the bus industry between 1998 and 2000.

TABLE 6-3: FULL-TIME EMPLOYEES IN THE BUS INDUSTRY,  
1998 – 2000

	1998	1999	2000
Intercity Operators	1,206	1,193	1,199
School Bus Operators	22,192	21,704	22,952
Charter Operators	3,115	3,254	3,339
Shuttle Services	551	757	717
Urban Transit	35,867	37,164	37,775
<b>Total</b>	<b>62,931</b>	<b>64,072</b>	<b>65,982</b>

Notes: Includes full-time workers of companies with annual revenues greater than \$2 million. Employment data disaggregated by category is available in the Addendum to the 2001 annual report on Transport Canada's Web site at [www.tc.gc.ca/pol/en/T-FACTS3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/T-FACTS3/Transportation_Annual_Report.htm).

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215; special tabulations and Transport Canada



## TRUCKING

Total employment in the Canadian trucking industry increased by 2.3 per cent from 1997 to 1999. This increase was driven mainly by increases in the number of employees working for medium and large for-hire trucking firms. More than 15,000 jobs were created in this segment of the industry between 1998 and 2000.

Table 6-4 shows total employment in the Canadian trucking industry between 1997 and 2000.

**TABLE 6-4: TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY, 1997 – 2000**

	1997	1998	1999	2000
For-Hire				
Medium and Large <sup>1</sup>	91,654	92,424	102,637	108,238
Small <sup>2</sup>	35,033	36,333	29,182	N/A
Private <sup>3</sup>	17,592	17,600	19,276	N/A
Owner Operators	64,242	63,304	60,488	N/A
<b>Sub-total</b>	<b>208,521</b>	<b>209,661</b>	<b>211,583</b>	<b>N/A</b>
Delivery Drivers <sup>4</sup>	98,900	100,409	102,800	N/A
<b>Total</b>	<b>307,421</b>	<b>310,070</b>	<b>314,383</b>	<b>N/A</b>

Note: N/A = Not Available

Employment data disaggregated by category and by region is available in the Addendum to the 2001 annual report on Transport Canada's Web site at [www.tc.gc.ca/pol/env/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/env/t-facts3/Transportation_Annual_Report.htm).

1 Includes Canadian-domiciled for-hire carriers with annual operating revenues of \$1 million or more.

2 Includes Canadian-domiciled for-hire carriers with annual operating revenues greater than \$30,000 and less than \$1 million. Includes part-time employees.

3 Statistics Canada's Private Trucking Survey suspended in 1999 until further notice. Estimated values for 1998 and 1999 based on 1997 data.

4 Based on 1996 Census data; estimated values for 1998 and 1999.

Source: Statistics Canada, *Trucking in Canada, Cat. 53-222: Survey of Employment, Payrolls and Hours, Cat. 72-002: Service Bulletin, Cat. 50-002: 1996 Census: special tabulations and Transport Canada*

## TAXI AND LIMOUSINE SERVICES

Total employment by firms involved in the provision of taxi and limousine services increased by 19.7 per cent between 1999 and 2001. Most of these new employees worked for firms in Ontario, Quebec and British Columbia.

**TABLE 6-5: EMPLOYMENT IN TAXI AND LIMOUSINE SERVICES BY PROVINCE, 1998 – 2001**

	1998	1999	2000	2001 <sup>2</sup>
New Brunswick	221	261	229	227
Quebec	2,288	2,199	2,561	2,747
Ontario	4,091	3,923	4,374	4,633
Manitoba	499	560	689	1,024
British Columbia	3,485	3,384	3,692	3,905
Nunavut <sup>1</sup>		36	37	42
Other <sup>3</sup>	1,842	1,667	1,965	1,818
<b>Canada</b>	<b>12,426</b>	<b>12,030</b>	<b>13,547</b>	<b>14,396</b>

Note: Industries classified in accordance with the new North American Industrial Classification System (NAICS).

1 Nunavut taxi employment for 1999 is based on 9 months of data.

2 Figures for 2001 are based on annualized 11 months weighted data.

3 Newfoundland, Prince Edward Island, Nova Scotia, Saskatchewan, Alberta and the Yukon.

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours, Cat. 72-002: CANSIM and special tabulations*

Table 6-5 shows the employment figures in taxi and limousine services by province between 1998 and 2001.

## MARINE

Total average annual employment in the marine transport industry has increased by 16.3 per cent since 1999. Although employment increased in all regions, the largest increases were in Ontario and British Columbia, with more than 1,000 jobs created in each of these provinces over the last three years.

Table 6-6 shows the average annual employment in the marine transport industry from 1998 to 2001.

**TABLE 6-6: AVERAGE ANNUAL EMPLOYMENT IN THE MARINE TRANSPORT INDUSTRY, 1998 – 2001**

	1998	1999	2000	2001
Nova Scotia <sup>1,2</sup>	613	691	733	758
New Brunswick <sup>1</sup>	1,281	1,247	1,275	1,369
Quebec <sup>1,2</sup>	1,522	1,633	1,921	2,403
Ontario <sup>1,2,3</sup>	1,912	2,117	2,455	3,155
British Columbia <sup>1</sup>	5,512	5,719	6,140	6,568
Other	1,042	1,180	1,286	1,357
<b>Canada<sup>1,2,3</sup></b>	<b>11,882</b>	<b>12,587</b>	<b>13,810</b>	<b>15,610</b>
<b>Total<sup>4</sup></b>	<b>20,477</b>	<b>21,684</b>	<b>22,905</b>	<b>25,217</b>

Note: All figures are based on 12 months annual weighted data and on 11 months annual weighted data for year 2001. Industries classified in accordance with the new North American Industrial Classification System (NAICS)

1 Includes Deep Sea, Coastal, Great Lakes Water Transport

2 Includes Inland Water Transport.

3 Includes Scenic and Sightseeing Water Transport

4 Includes incidental services (i.e. support activities relating to water transportation)

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours, Cat. 72-002: CANSIM and special tabulations*

## FERRY OPERATORS

The level of employment by Canadian ferry operators has remained relatively stable since 1998. In 2000, the decline in employment observed in the eastern region outweighed the increase in personnel reported by ferry operators in British Columbia, leading to a slight decrease in overall employment levels.

**TABLE 6-7: REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1998 – 2000**

	1998	1999	2000
Atlantic <sup>1</sup>	1,670	1,670	1,490
Quebec	710	710	680
Ontario	335	335	313
British Columbia	4,822	4,792	4,982
Prairies and Territories <sup>2</sup>	57	65	65
<b>Total</b>	<b>7,594</b>	<b>7,572</b>	<b>7,530</b>

Note: Data limited to members of the Canadian Ferry Operators Association. Figures are likely to underestimate real employment as data was not available for all ferry operators

1 Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland

2 Manitoba and the Northwest Territories.

Source: Canadian Ferry Operators Association

Table 6-7 shows the employment figures for Canadian ferry operators by region from 1998 to 2000.

## CANADIAN PORT AUTHORITIES

In 2001, the number of employees working for Canadian Port Authorities declined slightly for a second consecutive year, bringing employment eight per cent below the 1999 level.

Table 6-8 shows employment figures for Canadian Port Authorities by category from 1998 to 2001.

**TABLE 6-8: EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 – 2001**

	1998	1999	2000	2001
Administration	315	346	332	325
Management	219	215	216	201
Other	647	694	618	630
<b>Total</b>	<b>1,180</b>	<b>1,255</b>	<b>1,166</b>	<b>1,157</b>

Note: Totals do not equal sum of parts, as some ports did not provide detailed breakdowns.

Source: Canadian Port Authorities

## ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION

The level of full-time employment for the St. Lawrence Seaway Management Corporation has been steadily declining over the years. Although employment has declined in every category, employees working in operations were the most affected by personnel reductions.

Table 6-9 shows the employment level by category for the St. Lawrence Seaway Management Corporation from 1998 to 2001.

**TABLE 6-9: EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1998 – 2001**

	1998 <sup>1</sup>	1999 <sup>2</sup>	2000 <sup>2</sup>	2001 <sup>2</sup>
Management	15	11	12	11
Administration	70	65	67	67
Operations	540	499	491	490
<b>Total</b>	<b>625</b>	<b>575</b>	<b>570</b>	<b>568</b>
Temporary	33	39	31	31

1 As at December 31, 1998, St. Lawrence Seaway Authority.

2 As at December 31, the St. Lawrence Seaway Management Corporation.

Source: St. Lawrence Seaway Management Corporation

## PILOTAGE AUTHORITIES AND MARITIME EMPLOYERS ASSOCIATIONS

Total employment by Canadian Pilotage Authorities has been on the rise since the mid-1990s. In 2001, the number of employees increased slightly by 1.1 per cent.

Table 6-10 shows the employment levels of the Canadian Pilotage Authorities and the Maritime Employers Associations from 1998 to 2001.

**TABLE 6-10: EMPLOYMENT BY CANADIAN PILOTAGE AUTHORITIES AND MARITIME EMPLOYERS ASSOCIATIONS, 1998 – 2001**

	1998	1999	2000	2001
<b>Pilotage Authorities</b>				
Great Lakes Pilotage	83	86	89	87
Atlantic Pilotage	72	72	78	81
Laurentian Pilotage	224	228	233	239
Pacific Pilotage	167	167	168	167
<b>Employers Associations (EA)</b>				
Maritime EA <sup>1</sup>	1,279	1,253	1,195	1,163
British Columbia Maritime EA <sup>2</sup>	3,604	3,576	3,656	3,548

Note: Further disaggregated information is available in the Addendum to the 2001 annual report on Transport Canada's Web site at [www.tc.gc.ca/pol/en/T-FACTS3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/T-FACTS3/Transportation_Annual_Report.htm).

1 Includes ports of Montreal, Trois-Rivières, Bécancour, Toronto and Hamilton.

2 Includes ports of Vancouver, New Westminster, Prince Rupert, Chemainus, Port Alberni, Victoria, Port Simpson, Stewart and a category "Others."

Source: Canadian Pilotage Authorities; British Columbia Maritime Employers Association; Maritime Employers Association

## AIR

In 2000, total employment in the Canadian air industry increased by 2.1 per cent. Levels I–III air carriers reported large increases in all employment categories with an overall increase of nine per cent in personnel.

Table 6-11 shows total employment levels in the Canadian air industry from 1998 to 2000.

**TABLE 6-11: EMPLOYMENT IN THE AIR INDUSTRY, 1998 – 2000**

	1998	1999	2000 <sup>a</sup>
<b>Levels I-III<sup>1</sup></b>			
Pilots and Co-pilots	7,205	8,041	8,792
Other Flight Personnel	10,054	10,098	11,100
Management and Administration	4,022	4,227	4,813
Other Carrier Personnel	31,831	31,499	33,995
<b>Total</b>	<b>53,112</b>	<b>53,865</b>	<b>58,700</b>
<b>Level IV Total</b>	<b>5,456</b>	<b>4,287</b>	<b>N/A<sup>3</sup></b>
<b>Levels I-IV Total</b>	<b>58,568</b>	<b>58,152</b>	<b>N/A<sup>3</sup></b>
<b>Grand Total</b>			
<b>Including Incidental Services<sup>2</sup></b>	<b>76,929</b>	<b>81,211</b>	<b>82,907</b>

P = Preliminary data.

<sup>1</sup> Level definitions from 1998 to 1999:

- Levels I-III: Canadian air carriers that in each of the two calendar years immediately preceding the reporting year, transported 5,000 revenue passengers or more or 1,000 tonnes of revenue goods or more.

- Level IV: Canadian air carriers not classified in Levels I-III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of \$500,000 or more for the air services for which the air carrier held a licence.

<sup>2</sup> Incidental services: jobs that are associated with the air industry but are not defined in Statistics Canada's catalogue.

- Employment tabulations from Statistics Canada's publication, "Survey of Employment, Payrolls and Hours," are derived from air transport industry classified in accordance with the North American Industrial Classification System (NAICS).

- "Grand Total, Including Incidental Services" excludes helicopter and hot-air balloon jobs associated with scenic and sightseeing transportation.

<sup>3</sup> Effective 2000, data for Level IV carriers will no longer be available due to carrier level definition changes implemented by Statistics Canada. Most carriers formerly classified as Level IV now come under Level V which are not required to report employment data.

Source: Statistics Canada, Canadian civil aviation, Cat. 51-206; Survey of Employment, Payrolls and Hours, Cat. 72-002

## TRAVEL ARRANGEMENT AND RESERVATION SERVICES

Employment in the travel arrangement and reservation services industry increased by eight per cent from 1997 to 2001.

Table 6-13 shows employment figures for travel arrangement and reservation services from 1997 to 2001.

**TABLE 6-13: EMPLOYMENT BY TRAVEL ARRANGEMENT AND RESERVATION SERVICES<sup>1</sup>, 1997-2001**

	1997	1998	1999	2000	2001 <sup>2</sup>
Newfoundland and Nova Scotia	932	920	956	1,090	1,015
Quebec	7,414	7,043	7,211	7,052	7,308
Manitoba	630	739	744	598	478
Alberta	3,081	3,098	3,224	3,486	3,642
British Columbia	6,844	7,198	7,160	7,027	7,033
Other <sup>3</sup>	14,569	14,650	15,535	16,904	17,633
<b>Canada</b>	<b>29,466</b>	<b>30,487</b>	<b>30,488</b>	<b>31,179</b>	<b>31,805</b>

<sup>1</sup> Travel agencies, tour operators and other travel arrangement and reservation services. Industries classified in accordance with the North American Industrial Classification System (NAICS).

<sup>2</sup> Tabulations are based upon 11 months of averaged annual data.

<sup>3</sup> Prince Edward Island, New Brunswick, Ontario and Saskatchewan. Further breakdown of provincial data is not available for reason of data confidentiality.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002; CANSIM and special tabulations

## NATIONAL AIRPORTS SYSTEM AIRPORTS

In 2001, total employment at National Airports System airports declined slightly by 1.5 per cent. The number of employees working at Canadian Airport Authorities (CAA) and Local Airport Authorities (LAA) increased due to the creation of a new authority during the year.

Table 6-12 shows the number of employees working at National Airports System airports by region in 2001.

**TABLE 6-12: EMPLOYMENT AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS, 2001**

	CAA/LAA	Transport Canada Employees In-transit to NAS Airports	Total
Atlantic <sup>1</sup>	364	-	364
Central <sup>2</sup>	1,646	-	1,646
Western <sup>3</sup>	863	16	879
Territories <sup>4</sup>	39	-	39
<b>Total</b>	<b>2,912</b>	<b>16</b>	<b>2,928</b>

<sup>1</sup> Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick.

<sup>2</sup> Ontario, Quebec.

<sup>3</sup> Manitoba, Saskatchewan, Alberta, British Columbia.

<sup>4</sup> Yukon, Nunavut, Northwest Territories.

Source: Canadian Airport Authorities; Local Airport Authorities; Transport Canada

## NAV CANADA

In 2001, the number of employees working at NAV Canada increased by 3.1 per cent over the previous year. Although increases were recorded in all occupational groups, air traffic controllers and flight service specialists accounted for two thirds of the new employees.

Table 6-14 shows employment figures for NAV Canada by category from 1998 to 2001.

**TABLE 6-14: EMPLOYMENT AT NAV CANADA<sup>1</sup>, 1998 – 2001**

	1998	1999	2000	2001
Air Traffic Controllers	2,077	2,175	2,174	2,242
Flight Service Specialists	839	875	824	866
Electronic Specialists	868	850	795	797
Other <sup>2</sup>	1,626	1,366	1,553	1,607
<b>Total</b>	<b>5,410</b>	<b>5,266</b>	<b>5,346</b>	<b>5,512</b>

<sup>1</sup> As at December 31 of each year.

<sup>2</sup> Including engineers, pilots, technical support personnel, administrative staff and management

Source: NAV Canada



## OTHER

In 2001, employment by firms involved in the provision of public passenger transit services<sup>4</sup> or other incidental services to the bus industry declined slightly by 2.1 per cent. The same year, more than 2,500 other transportation positions were created. Employment in the pipeline transportation sector remained stable.

Table 6-15 shows employment in other occupations directly related to transport from 1998 to 2001.

**TABLE 6-15: OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT, 1998 – 2001**

	1998	1999	2000	2001 <sup>1</sup>
Other Public Passenger Transit	16,454	16,963	17,693	16,587
Other Transportation <sup>2</sup>	46,541	49,609	50,693	53,225
Pipeline Transportation	4,664	4,577	4,898	4,992
<b>Total</b>	<b>67,659</b>	<b>71,149</b>	<b>73,284</b>	<b>74,804</b>

Note: Industries classified in accordance with the North American Industrial Classification System (NAICS).

1 2001 based on 11 months of averaged annual data.

2 Employment data that is not assigned to a specific mode and that could be described as multi-modal in nature. Includes scenic and sightseeing transport – land and other, support activities – road and other, freight transport arrangement.

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours*, Cat. 72-002; CANSIM special tabulations

## GOVERNMENT SERVICES TIED TO TRANSPORTATION

The number of employees (full-time equivalents) devoted directly to transportation in federal departments and agencies has been declining since the mid-1990s. In 2001/02, the number of full-time equivalents declined by two per cent to 8,271.

Table 6-16 shows the number of planned full-time equivalents devoted directly to transportation in federal departments and agencies over the last four years.

**TABLE 6-16: PLANNED FULL-TIME EQUIVALENTS FEDERAL DEPARTMENTS AND AGENCIES, 1998/99 – 2001/02**

	1998/99	1999/00	2000/01	2001/02
Transport Canada	4,480	4,204	4,071	4,154
Canadian Coast Guard	3,945	4,086	3,928	3,603
Transportation Safety Board	229	234	230	235
Canadian Transportation Agency	249	249	251	271
Civil Aviation Tribunal	8	8	8	8
<b>Total</b>	<b>8,911</b>	<b>8,781</b>	<b>8,488</b>	<b>8,271</b>

Source: 1997 – 2001 Estimates, Government of Canada Main Estimates

## SALARIES

In 2001, average weekly earnings increased slightly in all segments of the transportation industry except the pipeline sector, which declined for the second year in a row.

Table 6-17 shows the average weekly earnings in the transportation and warehousing sector by mode from 1998 to 2001.

**TABLE 6-17: AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION AND WAREHOUSING SECTOR BY MODE<sup>1</sup>, 1998 – 2001**

(Current dollars)				
	1998	1999	2000	2001 <sup>6</sup>
Total Economy	632	639	654	664
Total Transport and Warehousing <sup>2</sup>	705	716	728	741
Rail <sup>3</sup>	856	872	877	887
Water <sup>3</sup>	893	906	930	971
Air <sup>1</sup>	833	851	859	883
Truck <sup>4</sup>	670	668	680	692
Public Transit <sup>4,5</sup>	579	585	592	611
Pipeline	1,146	1,221	1,208	1,177

Note: Tabulations based upon the North American Industrial Classification System (NAICS).

1 Does not include owner-operators, private trucking, delivery services or government employees.

2 Data only available for Transportation and Warehousing.

3 Includes support services (i.e. jobs that are associated with a particular industry and defined in Statistics Canada's Survey of Employment, Payrolls and Hours (SEPH), Cat. 72-002).

4 Excludes support services.

5 The Public Transit salary data tabulations are contained in the SEPH Matrix Series: Transit and Ground Passenger Transport. This particular Matrix Series takes into account the salary data contained in the following SEPH Matrix Series: Urban Transit Systems; Interurban and Rural Bus Transport; Taxi and Limousine Service; School and Employee Bus Transport; Charter Bus Industry; and a category, Other Transit and Ground Passenger Transportation.

6 Estimates based on 11 months of weighted annual averages.

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours*, Cat. 72-002; CANSIM and special tabulations

## RAIL

In 2000, total average annual compensation increased by 2.8 per cent in the rail industry. Although compensation increased in all occupational groups, employees classified as "general" benefited from the highest increase, with a 6.7 per cent improvement in their compensation.

Table 6-18 shows the average annual compensation in the rail industry by employment category from 1998 to 2000.

4 This includes firms that are not captured by Statistics Canada's survey on the bus industry.

**TABLE 6-18: AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY, 1998 – 2000**

	(Current dollars)		
	Total <sup>1</sup>	Class I	Class II and III
<b>1998</b>			
General	59,934	61,345	45,749
Transportation	62,771	64,275	52,244
Equipment Maintenance	46,056	45,470	50,725
Road Maintenance	49,497	50,565	43,227
<b>Total</b>	<b>55,508</b>	<b>56,465</b>	<b>48,549</b>
<b>1999</b>			
General	60,976	62,445	46,497
Transportation	66,670	68,636	53,691
Equipment Maintenance	46,836	46,580	48,786
Road Maintenance	50,695	52,186	42,575
<b>Total</b>	<b>57,592</b>	<b>58,887</b>	<b>48,622</b>
<b>2000</b>			
General	65,042	66,750	48,214
Transportation	67,014	69,010	54,453
Equipment Maintenance	47,922	47,763	49,011
Road Maintenance	52,171	53,800	44,270
<b>Total</b>	<b>59,233</b>	<b>60,724</b>	<b>49,654</b>

Note: Revised figures for 1996 and 1997 are available in the Addendum to the 2001 annual report on Transport Canada's Web site at [www.tc.gc.ca/pol/en/t-facts/3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts/3/Transportation_Annual_Report.htm)

<sup>1</sup> Total rail employment limited to carrier personnel.

Source: Statistics Canada, *Rail in Canada*, Cat. 52-216

## ROAD

This section discusses average annual compensation in the bus and trucking industries.

## Bus

In 2000, the average annual salary increased in all segments of the bus industry. Employees working for charter bus companies benefited from the highest increase, with a 13 per cent improvement in their compensation.

Table 6-19 shows the average annual compensation in different segments of the bus industry from 1998 to 2000.

**TABLE 6-19: AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY, 1998 – 2000**

	(Current dollars)		
	1998	1999	2000
Intercity	38,627	35,250	37,718
School Bus	16,527	17,946	19,291
Charter	24,141	22,052	24,910
Shuttle and Sightseeing	22,221	21,701	22,443
Urban Transit	53,826	53,356	54,175

Note: Data includes workers in companies with annual revenues greater than \$2 million; includes full-time and part-time workers. Salaries include benefits.

Source: Statistics Canada, *Passenger bus and urban transit statistics*, Cat. 53-215; special tabulations and Transport Canada

## TRUCKING

In 2001, average weekly earnings in the Canadian trucking industry increased slightly by 1.7 per cent. Earnings increased in all provinces except New Brunswick, where a sharp decline of 8.4 per cent was recorded. Although historically British Columbia has had the highest weekly earnings, Ontario took the lead in 2001 with earnings 12.8 per cent above the national average. The lowest earnings were recorded in New Brunswick.

Table 6-20 shows average weekly earnings in the trucking industry by province from 1998 to 2001.

**TABLE 6-20: AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1998 – 2001**

	(Current dollars)			
	1998	1999	2000	2001 <sup>1</sup>
<b>Eastern Canada</b>				
Newfoundland	558	587	639	654
Prince Edward Island	511	513	533	549
Nova Scotia	539	557	584	597
New Brunswick	577	551	540	495
Quebec	571	578	581	583
Ontario	752	727	751	781
<b>Western Canada</b>				
Manitoba	645	655	682	700
Saskatchewan	642	619	621	638
Alberta	666	703	705	705
British Columbia	755	738	752	766
Yukon	663	625	616	637
<b>Canada</b>	<b>670</b>	<b>668</b>	<b>680</b>	<b>692</b>

Note: Industries classified in accordance with the new North American Industrial Classification System (NAICS).

<sup>1</sup> Average based on 11 months of weighted annual data

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours*, Cat. 72-002; CANSIM

## MARINE

The annual labour costs of Canadian-based marine carriers increased by an average four per cent from 1997 to 2000. Salaries increased in all categories, with non-vessel crew employees enjoying the highest increase, at 2.7 per cent in 1999. Employees of for-hire marine carriers earned 17 per cent more than their government and private carrier counterparts for the same year.

Table 6-21 shows the average annual labour costs per employee for Canadian-based marine carriers from 1997 to 2000.

**TABLE 6-21: ANNUAL LABOUR COSTS PER EMPLOYEE,  
CANADIAN-BASED MARINE CARRIERS,  
1997 – 2000**

(Current dollars)				
	1997	1998	1999	2000 <sup>1</sup>
<b>Government and Private</b>				
Vessel Crew	51,429	51,020	51,669	51,669
Other	42,422	43,721	43,866	43,866
<b>Total</b>	<b>48,154</b>	<b>47,763</b>	<b>48,975</b>	<b>48,975</b>
<b>For-Hire<sup>2</sup></b>				
Vessel Crew	62,377	61,156	61,765	61,765
Other	41,748	47,533	50,137	50,137
<b>Total</b>	<b>56,915</b>	<b>57,127</b>	<b>59,401</b>	<b>59,401</b>
<b>Total</b>				
Vessel Crew	57,065	56,703	57,591	57,591
Other	42,147	45,209	46,418	46,418
<b>Total</b>	<b>52,370</b>	<b>52,540</b>	<b>54,588</b>	<b>54,588</b>

<sup>1</sup> Estimates

<sup>2</sup> Excluding Tour Boat Operator employees.

Source: Statistics Canada, *Shipping in Canada*, Cat. 54-205

## AIR

Labour costs of Canadian air carriers have increased by more than ten per cent in each employment category since 1998. In 2000, pilots and co-pilots benefited from the largest increase, with an improvement of 7.4 per cent in their compensation.

Table 6-22 shows the annual labour costs for Canadian air carriers, by employment category from 1998 to 2000.

**TABLE 6-22: ANNUAL LABOUR COSTS PER EMPLOYEE  
OF CANADIAN AIR CARRIERS, 1998 – 2000**

(Current dollars)			
	1998	1999	2000 <sup>1</sup>
<b>Levels I – III<sup>2</sup></b>			
Pilots and Co-pilots	81,295	84,250	90,462
Other Flight Personnel	37,192	41,284	41,795
Management and Administration	52,551	57,298	58,367
Other Carrier Personnel	43,188	46,441	48,602
<b>Total</b>	<b>48,069</b>	<b>51,971</b>	<b>54,391</b>
<b>Level IV Total</b>	<b>42,863</b>	<b>44,945</b>	<b>N/A<sup>3</sup></b>
<b>Levels I – IV Total</b>	<b>47,650</b>	<b>51,453</b>	<b>N/A<sup>3</sup></b>

<sup>1</sup> Preliminary data.

<sup>2</sup> Level definitions from 1998 to 1999.

- Levels I – III: Canadian air carriers that, in each of the two calendar years immediately preceding the reporting year, transported 5,000 revenue passengers, or more or 1,000 tonnes of revenue goods or more.

- Level IV: Canadian air carriers not classified in Levels I-III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of \$500,000 or more for the air services for which the air carrier held a licence.

<sup>3</sup> Effective 2000, data for Level IV carriers will no longer be available due to carrier level definition changes implemented by Statistics Canada. Most carriers formerly classified as Level IV now come under Level V which are not required to report employment data.

Source: Statistics Canada, *Canadian civil aviation*, Cat. 51-206



*The economic slowdown observed in 2001 in North American economies, as well as in other industrialized economies, affected Canada's trade with other countries.*

Transportation is essential to trade and crucial to the economic growth of any country. In Canada's open economy, trade transactions require that commodities be moved within or between provinces and territories, as well as shipped between Canada and various countries. The growth and structure of trade influence not only the demand for transportation, but also the choice of the mode of transportation.

This chapter examines the close relationship between Canada's domestic and international trade and transportation from 1997 to 2000, and looks at 2001 when data for that year is available. Domestic trade is explored in terms of goods and services<sup>1</sup> moved within and between provinces.<sup>2</sup> International trade is examined in terms of both structure of trade and choice of mode.

Transportation needs for goods differ from those for services. In 1999, trade in services totalled \$1,088 billion, mostly within Canada (\$964 billion). Trade in services accounted for two thirds of domestic trade, but only 15 per cent of international trade. The transportation chain refers to modal choice and logistics, and applies to the movement of goods. In 1999, merchandise trade was estimated at \$1,170 billion, including \$495 billion which moved within and between provinces. Trade in goods represented nearly 85 per cent of international trade and more than 33 per cent of domestic trade.

Tables 7-1 and 7-2 break down domestic and international trade in terms of goods and services.

**TABLE 7-1: DOMESTIC AND INTERNATIONAL GOODS'  
TRADE IN CANADA, BY VALUE AND VOLUME,  
1999 – 2000**

	----- Domestic Trade -----			-- International Trade --		
	Intra-provincial	Inter-provincial	Total	Exports	Imports	Total
<b>Value<sup>1</sup></b>	(Billions of dollars)					
1999	387.6	107.6	495.2	354.9	320.2	675.1
2000	N/A	N/A	N/A	412.9	356.9	769.8
<b>Volume<sup>2</sup></b>	(Millions of tonnes)					
1999	270.0	185.6	455.6	489.8	203.4	693.2
2000	279.6	191.2	470.8	503.5	208.7	712.2

- 1 Value not available (N/A) for 2000 domestic trade; custom-based data for international trade. Total exports, including domestic exports and re-exports.
- 2 Underestimated volume for domestic trade, as private trucking carriers, small for-hire trucking firms, owner-operators and courier activities are not included. Estimated tonnes for international trade based on conversion factors developed by Statistics Canada.

Source: Statistics Canada, Input-Output Division; International Trade Division, Cat. 65-202 and 65-203; special tabulations; Transportation Division, modal surveys, special tabulations and Transport Canada

**TABLE 7-2: DOMESTIC AND INTERNATIONAL SERVICES'  
TRADE IN CANADA, 1999 – 2000**

	(Billions of dollars)					
	----- Domestic Trade -----			-- International Trade --		
	Intra-provincial	Inter-provincial	Total	Exports	Imports	Total
<b>Value<sup>1</sup></b>						
1999	882.1	81.5	963.6	74.1	50.0	124.1
2000	N/A	N/A	N/A	N/A	N/A	N/A

- 1 Value not available (N/A) for 2000 domestic trade

Source: Statistics Canada, Input-Output Division

1 "Goods" consist of primary and manufactured products. "Services" include activities such as transportation and storage, communication services, wholesale and retail trade services, finance, insurance and real estate services, business and personal, and miscellaneous services.

2 Interprovincial trade flows are estimated using the provincial National Accounts Information System, which is based on inputs and outputs. Statistics Canada recently issued a short new time series based on the new North American Industry Classification System (NAICS), but this does not include a modal breakdown of the provincial trade flows. Interprovincial trade information for 2000 was not available.

## DOMESTIC TRADE

### OVERVIEW

From 1997 to 1999, the value of domestic trade in goods and services rose from \$1,355 billion to an estimated \$1,459 billion in current dollars. This represents an average annual growth of four per cent. In terms of constant (1997) dollars, however, this average growth was 2.4 per cent. As explained later in this chapter, growth in domestic trade was moderate compared with growth in international trade over the same period.

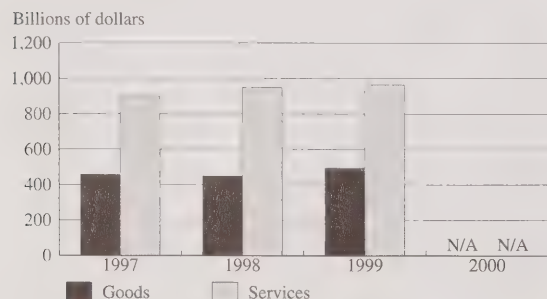
Table 7-1 shows total domestic and international goods traded in Canada by value and volume in 1999 and 2000.

Transactions in services dominated domestic trade, with a 67 per cent average share from 1997 to 1999, leaving the remaining third of domestic trade to goods. From 1997 to 1999, the value of services traded rose from \$897 billion to an estimated \$964 billion.

Intraprovincial trade of goods and services accounted for most of domestic trade, averaging 87 per cent over the period 1997 to 1999. The value of interprovincial trade increased at an average annual rate of four per cent, rising from \$175 billion in 1997 to \$189 billion in 1999.

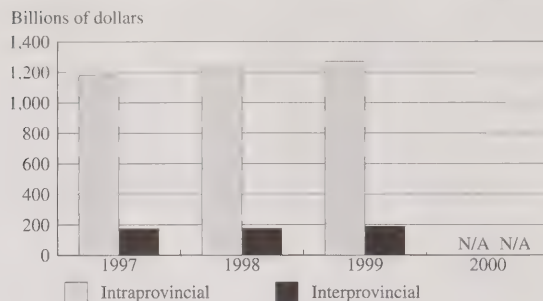
Figures 7-1 and 7-2 show Canada's domestic trade by type and sector from 1997 to 2000.

FIGURE 7-1: DOMESTIC TRADE BY TYPE, 1997 – 2000



Source: Statistics Canada, Input-Output Division; Transport Canada

FIGURE 7-2: DOMESTIC TRADE BY SECTOR, 1997 – 2000



Source: Statistics Canada, Input-Output Division; Transport Canada

### COMPOSITION OF TRADE AND MODAL CHOICE

As mentioned, services dominated domestic trade from 1997 to 1999. The main types of services contributing to this trade activity were business and finance, wholesale and retail trade, the government sector, construction and transportation. Goods traded domestically registered an annual increase of close to four per cent over the same period, rising from \$457 billion to almost \$500 billion. Fabricated materials and manufactured products represented about 80 per cent of total domestic trade, while primary goods and crude materials accounted for the remaining 20 per cent.

In terms of volume, the flow of goods within national borders rose from 427 million tonnes in 1997 to 471 million tonnes in 2000, an average increase of almost 3.5 per cent a year. Approximately 55 per cent of the volume shipped was primary and crude materials, such as grains, iron ore, lumber, logs, potash, bauxite, coal and other non-metallic minerals. More than 70 per cent of rail and marine activity was related to transportation of primary goods in 2000. Not surprisingly, around 70 per cent of for-hire trucking business was related to the transportation of manufactured and fabricated products and materials.

Table 7-3 summarizes the modal distribution of domestic freight flows in 2000 in terms of volume. Rail ranked first, with a 45 per cent share (210 million tonnes). It was followed closely by for-hire trucking<sup>3</sup> with 43 per cent (205 million tonnes) and marine with 12 per cent (55 million tonnes). The share of trucking does not take into account trucking activities of small for-hire trucking firms, private trucking and small owner-operators. In 2000,

3 For-hire trucking includes Canada-domiciled Class I and II carriers earning annual intercity revenues of \$1 million or more, as defined by Statistics Canada in the "Quarterly For-Hire Trucking (Commodity Origin/Destination) Survey." Courier and messenger service, private carrier, small for-hire and owner-operator activities are excluded from the survey.

containerized freight accounted for seven per cent of domestic rail tonnage, but only one per cent of domestic marine tonnage. The importance of containerization in domestic truck traffic activity cannot be measured because there is no relevant data.

**TABLE 7-3: DOMESTIC TRANSPORTATION FLOWS, BY COMMODITY AND MODE, 2000**

(Millions of metric tonnes)

	Rail <sup>1</sup>	Marine	For-hire Trucking	Air	Total
<b>Primary Products</b>					
Grains	26.8	4.7	3.4		34.9
Forest Products	19.6	12.3	26.0		57.9
Metallic Ores	50.6	9.5	2.1		62.2
Non-metallic Minerals	23.5	11.9	16.5		51.9
Minerals Fuels	39.4	5.4	9.8		54.6
Total	159.9	43.8	57.8		261.5
<b>Total Manufactured Products</b>					
Products	50.3	11.7	146.8	0.5	209.3
<b>Total All Products</b>	<b>210.2</b>	<b>55.5</b>	<b>204.6</b>	<b>0.5</b>	<b>470.8</b>

Notes: Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).

<sup>1</sup> Rail 2000 preliminary (estimated).

Source: Transport Canada, adapted from various Statistics Canada publications

**TABLE 7-4: INTRAPROVINCIAL TRADE BY TYPE, 1999**

(Billions of dollars)

	Goods	Services	Total	Share (per cent)
Ontario	149	355	504	39.7
Quebec	82	191	273	21.5
British Columbia and Territories	48	127	176	13.8
Alberta	63	97	159	12.5
Manitoba and Saskatchewan	23	57	80	6.3
Atlantic Provinces	22	55	77	6.1
<b>Total</b>	<b>388</b>	<b>882</b>	<b>1,270</b>	<b>100</b>

Source: Statistics Canada, Input-Output Division

**TABLE 7-5: DOMESTIC TRANSPORTATION FLOWS BY SECTOR AND MODE, 2000**

(Millions of metric tonnes)

	Rail <sup>1</sup>	Marine	For-hire Trucking	Air	Total
<b>Sectors</b>					
Intraprovincial	88.1	37.4	154.1	N/A	279.6
Interprovincial	122.1	18.1	50.5	N/A	190.7
<b>Total</b>	<b>210.2</b>	<b>55.5</b>	<b>204.6</b>	<b>0.5</b>	<b>470.8</b>

Notes: N/A= Not available

Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).

<sup>1</sup> Rail 2000 preliminary (estimated).

Source: Transport Canada, adapted from various Statistics Canada publications

## INTRAPROVINCIAL TRADE

Intraprovincial trade remained the backbone of domestic trade with 87 per cent of all domestic trade from 1997 to 1999. Trade in services was dominant, with a 70 per cent share, leaving trade in goods with a 30 per cent share. In 1999, the value of services traded reached \$882 billion, while the value of goods traded was \$388 billion.

In 1999, Ontario ranked first for traded goods as well as for services, with a 40 per cent share (\$149 billion for goods and \$355 billion for services). Quebec came second at 22 per cent, followed by British Columbia and the territories at 14 per cent, and Alberta at 13 per cent. Manitoba, Saskatchewan and the Atlantic Provinces accounted for 12 per cent. In terms of goods traded, Alberta ranked third after Ontario and Quebec.

In 2000, for-hire trucking made up more than 55 per cent of total intraprovincial traffic, estimated at 280 million tonnes. Rail traffic was second at 32 per cent, followed by marine traffic at 13 per cent.

Table 7-4 shows intraprovincial trade for 1999 by type. Table 7-5 shows the modal distribution of domestic trade by sector for 2000.

The quantity of shipments of manufactured products is generally a good indicator of trucking activity. From 1997 to 2000, the value of shipments of manufactured products registered a strong performance, growing at an average annual rate of eight per cent, rising from \$426 billion to \$537 billion. Unfilled orders — usually regarded as an indicator of future shipments — grew at an average rate of 12 per cent over the same period.

Year 2001 marked a pause in economic growth, as the shipments of manufactured products dropped off by five per cent, the first annual decline in a decade. Unfilled orders also declined by one per cent.<sup>4</sup> Despite the economic slowdown, service-producing industries continued to do better than goods industries, growing by almost one per cent in 2001, while the growth of goods industries fell by two per cent in the third quarter of 2001.<sup>5</sup>

## INTERPROVINCIAL TRADE

Trade between provinces represented a relatively small share (13 per cent) of total domestic trade from 1997 to 1999. Interprovincial trade grew by four per cent, from \$175 billion to \$189 billion in 1999. Trade in goods was dominant, with \$108 billion in 1999, and accounting for

<sup>4</sup> Statistics Canada, CANSIM series, Table 304-0014.

<sup>5</sup> Statistics Canada, Infomat, Cat. 11-002, February 2002.



nearly 60 per cent of interprovincial trade. Major goods traded were food products, machinery and equipment, and mineral fuels.

As Table 7-5 shows, rail and for-hire trucking carried nearly 90 per cent of total interprovincial freight.

Although small in numbers, interprovincial trade supports important economic interactions among provinces. The following section examines westward and eastward trade flows to illustrate main provincial trade routes.

## MAIN EAST–WEST ROUTES

In 1999, westward and eastward flows were nearly balanced, the former totalling \$95.3 billion and the latter \$93.8 billion. Six trade flows, each with more than \$10 billion in trade, accounted for \$100 billion of interprovincial trade and more than 50 per cent of total interprovincial trade. Of these six, three were westward flows: Quebec to Ontario, Ontario to Alberta, and Ontario to British Columbia. The other three were eastward: Ontario to Quebec, Ontario to the Atlantic provinces, and Alberta to Ontario. Figures 7-3 and 7-4 illustrate the top five westward and eastward flows among provinces and show that the linkages between neighbouring provinces are strong. As these figures also show, Ontario was present in eight of the ten top interprovincial flows.

**FIGURE 7-3: INTERPROVINCIAL TRADE, TOP FIVE WESTWARD TRADE FLOWS, 1999**

(Billions of dollars)



Source: Transport Canada

When interprovincial trade is examined by provincial pairs in both directions, Quebec/Ontario flows ranked first, capturing \$54 billion, or nearly 29 per cent of total interprovincial trade. Ontario/Alberta flows were second with \$24 billion (13 per cent), followed by Ontario/British Columbia flows at \$16 billion (eight per cent). These three

**FIGURE 7-4: INTERPROVINCIAL TRADE, TOP FIVE EASTWARD TRADE FLOWS, 1999**

(Billions of dollars)



Note: Other regions exclude Ontario as origin.

Source: Transport Canada

pairs represented nearly 50 per cent of total trade among provinces.

Table 7-6 shows the main interprovincial trade flows by direction. Ontario was the only province that registered a positive trade balance with other provinces in recent years.

**TABLE 7-6: INTERPROVINCIAL TRADE, MAIN EAST–WEST ROUTES, 1999**

(Billions of dollars)

Routes (from/to)	Flow Direction	Trade Value	Share in per cent
Quebec / Ontario	Westward	23.85	12.6
Ontario / Alberta	Westward	13.58	7.2
Ontario / British Columbia	Westward	11.74	6.2
Ontario / Manitoba and Saskatchewan	Westward	8.79	4.6
Alberta / British Columbia	Westward	6.95	3.7
Manitoba and Saskatchewan / Alberta	Westward	4.28	2.3
Quebec / Alberta	Westward	4.10	2.2
Quebec / British Columbia	Westward	3.89	2.1
Atlantic Provinces / Ontario	Westward	3.65	1.9
Atlantic Provinces / Quebec	Westward	3.54	1.9
Quebec / Manitoba and Saskatchewan	Westward	2.50	1.3
Other Westward flows	Westward	8.48	4.5
<b>Total Westward flows</b>		<b>95.33</b>	<b>50.4</b>
Ontario / Quebec	Eastward	29.91	15.8
Ontario / Atlantic Provinces	Eastward	10.56	5.6
Alberta / Ontario	Eastward	10.11	5.3
British Columbia / Alberta	Eastward	6.36	3.4
Manitoba and Saskatchewan / Ontario	Eastward	6.17	3.3
Alberta / Manitoba and Saskatchewan	Eastward	5.86	3.1
Quebec / Atlantic Provinces	Eastward	5.78	3.1
British Columbia / Ontario	Eastward	4.34	2.3
Alberta / Quebec	Eastward	2.66	1.4
Manitoba and Saskatchewan / Quebec	Eastward	2.12	1.1
British Columbia / Quebec	Eastward	2.11	1.1
Other Eastward flows	Eastward	7.77	4.1
<b>Total Eastward flows</b>		<b>93.75</b>	<b>49.6</b>
<b>Total Interprovincial Trade</b>		<b>189.09</b>	<b>100.0</b>

Note: No double-counting as the exports of one province are the imports of another. Interprovincial trade includes value of goods and services.

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

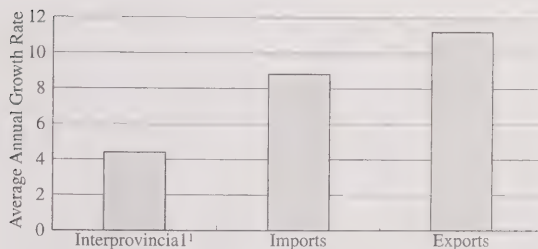
## INTERNATIONAL TRADE

### OVERVIEW

An examination of international trade flows reveals the increasing importance that outside markets have for provincial economies. From 1997 to 2000, exports of goods and services to external markets increased at an average rate of 11 per cent, from \$348 billion to \$479 billion.<sup>6</sup> For imports, the average annual growth rate was close to nine per cent over the same period, as goods and services entering the country rose from \$331 billion to \$426 billion. Over 85 per cent of international trade from 1997 to 2000 was composed of traded goods, while the balance was services, mainly commercial and transportation.

The average growth rate of international trade flows from/to Canadian provinces and territories was more than twice that of interprovincial trade flows, which were close to 4.5 per cent from 1997 to 1999. Figure 7-5 shows the average growth rates for trade sectors between 1997 and 2000.

**FIGURE 7-5: AVERAGE ANNUAL GROWTH RATE OF INTERPROVINCIAL AND INTERNATIONAL TRADE, 1997 – 2000**



Note: Including goods and services.

<sup>1</sup> 1997-99 only for Interprovincial.

Source: Statistics Canada, National Income and Expenditure Accounts, Cat. 13-001, Statistics Canada, Input-Output Division

### TRADE FLOWS AND MODAL CHOICE

The following sections look at the trade of goods and what transportation modes were used to move them between Canada and the United States, as well as between Canada and countries other than the United States.

## CANADA-US TRADE

### IMPACT OF CANADA-US TRADE

Since the 1970s, commercial exchanges with the United States have been increasingly important as a driver of economic activity for Canada. In 1981, Canada's exports to the United States accounted for 66 per cent of Canada's total export trade in terms of value. This share soared to 75 per cent in 1991 and reached a peak of 87 per cent in 2001,<sup>7</sup> with \$351 billion worth of goods exported to the United States, compared with only \$51 billion exported to other countries. Canada's imports from the United States have oscillated between 65 per cent and 69 per cent of Canada's total imports for the past 20 years.

From 1997 to 2000, Canada's exports to the United States showed a strong annual growth rate of 13.8 per cent, growing from \$244 billion to \$359 billion. Exports to other countries, on the other hand, were stagnant (zero growth) due to economic difficulties in Asian and Latin American countries. Canada's imports from the United States grew more modestly, with an average increase of 7.6 per cent over the period, rising from \$204 billion to \$230 billion. Canada's imports from other countries, however, were more robust, with an average annual increase of nearly 13 per cent.

By the end of 2000, an economic slowdown had started in the United States and continued to affect economic activities between the trade partners throughout 2001. This situation was further aggravated by the September terrorist attacks on the United States. As a result, Canada's trade with the United States declined in 2001 for the first time in a decade, as exports to the United States decreased by two per cent, and imports from the United States decreased by five per cent.

Figure 7-6 shows the importance of the United States in Canada's total exports over the last five years.

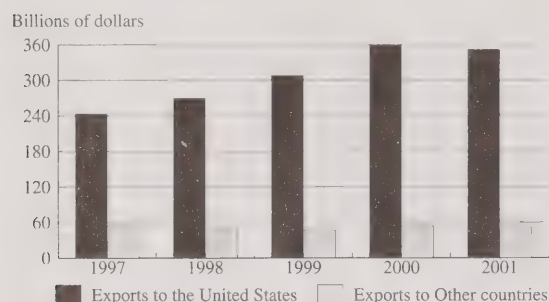
### MODAL SPLIT

In terms of value, trucking is the dominant mode of transportation for North American trade, carrying over 65 per cent of Canada-US trade in 2000. This can be broken down as nearly 57 per cent of Canada's exports to the United States and 80 per cent of imports from the United States. In 2000, Canada's exports to the United

<sup>6</sup> In the absence of recent "input-output" data, 2000 data on "Exports/Imports of goods and services" are used from Statistics Canada, National Income and Expenditure Accounts, Cat. 13-001, 2001.

<sup>7</sup> Preliminary data for 2001.

**FIGURE 7-6: US IMPORTANCE IN CANADA'S EXPORTS, 1997 – 2001**



Note: Total exports, including domestic exports and re-exports. Preliminary data for 2001.

Source: Statistics Canada, Cat. 65-202 and 65-001; special tabulations

States by truck totalled \$200 billion, while imports by truck totalled \$183 billion. Rail ranked second, carrying 16 per cent of total Canada–US trade, followed by pipeline at nine per cent, air at eight per cent and marine at two per cent. Rail shipments were particularly export-oriented (four times the value of rail imports), and pipeline movements were mainly southbound.

On a tonnage basis, the picture was different, as pipeline ranked first on the export side, moving 147 million tonnes (44 per cent of exports to the United States), followed by trucking, rail and marine transport services, with shares of 21, 19 and 16 per cent, respectively. Trucking dominated imports from the United States with a 55 per cent share of the volume of shipments, followed by marine and rail.

In 2001, the trucking and air modes were the most affected by the economic slowdown, as the value of total shipments by these modes declined by five and ten per cent, respectively, from 2000 levels. The value of rail shipments to the United States stayed at its 2000 level.

Table 7-7 examines the value and volume of Canada's trade with the United States by mode and sector between 1997 and 2001.

## CANADA–US TRADE BY REGION

In 2000, 79 per cent of Canada's trade with the United States involved the eastern provinces, with Ontario accounting for 61 per cent of the total and Quebec for 15 per cent. Ontario captured 54 per cent of exports to the

**TABLE 7-7: CANADA–US TRADE BY MODE AND SECTOR, 1997 – 2001**

<i>Year</i>	<i>Billions of dollars</i>	<i>Share in per cent</i>				
		<i>Road</i>	<i>Rail</i>	<i>Marine</i>	<i>Air</i>	<i>Other</i>
<b>Exports<sup>1</sup></b>						
1997	243.9	59.7	22.1	2.8	5.0	10.5
1998	269.9	62.7	20.8	2.3	5.2	9.0
1999	308.1	60.2	22.8	2.2	5.7	9.1
2000	359.3	55.8	21.0	2.6	6.6	13.9
2001	351.5	54.8	21.4	2.7	6.2	14.9
<b>Imports</b>						
1997	184.3	79.2	9.6	1.5	9.2	0.6
1998	203.6	80.0	8.6	1.5	9.2	0.7
1999	215.4	81.1	7.8	1.3	9.4	0.4
2000	229.7	79.6	8.1	1.4	10.3	0.6
2001	218.4	78.1	9.0	1.6	9.7	1.7

<i>Year</i>	<i>Million tonnes<sup>2</sup></i>	<i>Share in per cent</i>				
		<i>Road</i>	<i>Rail</i>	<i>Marine</i>	<i>Air</i>	<i>Other</i>
<b>Exports</b>						
1997	294.4	21.0	18.1	17.1	0.1	43.6
1998	303.5	21.2	18.5	16.2	0.2	44.0
1999	307.5	24.0	19.0	16.3	0.2	40.6
2000	335.1	21.1	19.0	15.9	0.2	43.8
2001	338.2	20.2	19.2	15.5	0.2	44.9
<b>Imports</b>						
1997	122.5	58.5	11.3	25.4	1.7	3.0
1998	129.8	51.6	13.3	27.7	1.9	5.6
1999	125.4	55.9	12.1	28.3	1.2	2.4
2000	123.4	55.3	14.3	27.2	1.5	1.7
2001	128.8	55.4	15.5	25.9	1.2	2.1

<sup>1</sup> Total exports, including domestic exports and re-exports. Preliminary data for 2001.

<sup>2</sup> Tonnes estimated based on weight conversion factors developed by Statistics Canada.

Source: Statistics Canada, Cat. 65-202 and 65-203, special tabulations; Transport Canada, adapted from Statistics Canada

United States, or \$193 billion, and 73 per cent of imports, or \$168 billion. Trucks carried over 75 per cent of the shipments' value involving Ontario and the United States. Canada's western provinces, led by Alberta and British Columbia, accounted for 21 per cent of Canada–US trade.

All Canadian provinces except Manitoba and the territories registered a positive trade balance with the United States; that is, their exports exceeded their imports. In 2001, Canada's trade with the United States experienced a 3.2 per cent decrease, which affected all provinces except Alberta, Nova Scotia and New Brunswick. These provinces showed an increased level of trade with the United States. British Columbia's trade record with the United States in 2001 was similar to that observed in 2000. Table 7-8 shows Canada's trade with the United States by province.

On the US side, all regions<sup>8</sup> recorded a negative balance with Canada in 2000 and 2001. In 2000,

<sup>8</sup> The four US regions include: the US Central, which includes the states bordering the Great Lakes (Central East), as well as North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West); the US North East, which refers to the New England and Atlantic states, including New Jersey, New York and Pennsylvania; the US South, which includes southern states from the Atlantic coast to the Gulf of Mexico; and the US West, which includes US mountain and Pacific states. Data related to unknown states were left in a residual category called "US Other."



TABLE 7-8: CANADA-US TRADE BY PROVINCE, 2000 – 2001

	(Billions of dollars)			2001 Total	Per cent change
	Exports	Imports	Total		
Ontario	193.1	167.5	360.6	344.6	(4.4)
Quebec	63.5	23.1	86.5	81.0	(6.4)
Alberta	49.2	9.0	58.2	61.3	5.4
British Columbia	23.6	13.3	37.0	37.1	0.3
Manitoba	8.0	9.4	17.4	16.0	(8.2)
Saskatchewan	7.7	3.9	11.6	11.2	(3.8)
New Brunswick	6.5	2.3	8.8	9.7	11.1
Nova Scotia	4.3	0.7	5.0	5.8	17.4
Newfoundland	2.9	0.3	3.1	2.5	(20.2)
Prince Edward Island	0.6	0.0	0.6	0.6	(4.4)
Yukon and Northwest Territories	0.0	0.1	0.1	0.1	(17.9)
<b>Total</b>	<b>359.3</b>	<b>229.6</b>	<b>588.9</b>	<b>569.9</b>	<b>(3.2)</b>

Note: Trade includes total exports and imports; preliminary data for 2001.

Source: Statistics Canada, Cat. 65-202, 65-001 and 65-203; special tabulations

the US Central region dominated US trade with Canada, with \$244 billion, or 42 per cent of trade (\$146 billion from Canada and \$98 billion to Canada). The US North East ranked second, with \$130 billion, or 22 per cent of trade, followed by the US South at \$117 billion, or 20 per cent, and the US West at \$89 billion. In 2001, all the US regions registered a decline in trade with Canada, except the US West, which showed an increase of 1.5 per cent. The US North East had the most significant decrease in trade with Canada, dropping by ten per cent.

## TRADE CONCENTRATION

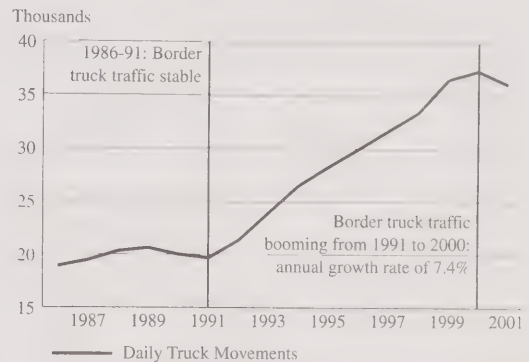
As mentioned above, trucking carries over 65 per cent of total Canada-US trade. In 2000, daily trade between Canada and the United States amounted to \$1.6 billion, including over \$1 billion by trucks. Over 125 border crossing points recorded trucking activities between the two countries. From 1991 to 2000, daily truck traffic at Canada-US border crossings soared at an annual rate of 7.4 per cent, from 19,600 to a peak of 37,400 daily truck movements. In 2001, for the first time in a decade, daily truck movements decreased by three per cent to 36,100 movements.<sup>9</sup>

Transborder truck movements are highly concentrated. In 2000, Ontario border crossings accounted for over 60 per cent of all Canadian transborder truck movements and over 70 per cent of the value of all Canada-US trade by trucks. Ontario's dominant position in truck movements can be explained by its proximity to the US industrial heartland and to in-transit truck traffic originating from or destined to other provinces, but travelling through Ontario. Ontario also plays an important role within the highly integrated North American automobile industry.

In terms of trade shipments moved by road, four of the five busiest border crossing points are in Ontario (the Windsor/Ambassador Bridge, Fort Erie/Niagara Falls, Sarnia and Lansdowne). The fifth busiest is in Lacolle, Quebec. These five border crossing points handled almost 75 per cent of total Canada-US trade by road in 2000.

Figure 7-7 shows the growth of daily truck traffic at Canada-US border crossing points between 1986 and 2001. Table 7-9 indicates the major road transportation border crossing points in Canada's trade with the United States in 2000.

FIGURE 7-7: DAILY TRUCK TRAFFIC AT CANADA-US BORDER CROSSINGS, 1986 – 2001



Source: Transport Canada, adapted from Statistics Canada, International Travel data

TABLE 7-9: CANADA'S ROAD TRADE WITH THE US BY BUSIEST BORDER CROSSING POINTS, 2000

	(Billions of dollars)			
	Exports by Road	Imports by Road	Total Trade by Road	Share in per cent
Windsor/Ambassador, Ontario	59.4	67.3	126.6	33.1
Fort Erie/Niagara Falls, Ontario	39.5	28.9	68.4	17.9
Sarnia, Ontario	26.0	23.8	49.8	13.0
Lacolle, Quebec	15.6	5.9	21.4	5.6
Lansdowne, Ontario	11.4	6.6	18.1	4.7
Pacific Highway, British Columbia	8.9	6.3	15.2	4.0
Emerson, Manitoba	7.0	7.5	14.5	3.8
Philipsburg, Quebec	6.3	3.3	9.6	2.5
Coutts, Alberta	5.2	4.0	9.2	2.4
North Portal, Saskatchewan	3.5	3.2	6.6	1.7
Other Points	17.6	25.9	43.5	11.4
<b>Total</b>	<b>200.3</b>	<b>182.8</b>	<b>383.1</b>	<b>100.0</b>

Source: Statistics Canada, International Trade Division, special tabulations

## COMMODITY MIX AND MAJOR TRADE FLOWS

In 2000, 18 trade flows — 11 with American destinations and seven with American origins — recorded

9 Adapted by Transport Canada, from Statistics Canada, International Travel Section, Tables 1A and 1B.

annual shipments worth approximately \$10 billion. The top five export flows accounted for \$174 billion, or nearly 50 per cent of all Canada's exports to the United States, while the top five import flows totalled \$137 billion, or 60 per cent of all of Canada's imports from the United States. The majority of these flows involved Ontario as the province of origin or destination.

Trade flows between Ontario and the US Central East region<sup>10</sup> ranked first with southbound shipments in 2000 totalling \$93 billion and northbound shipments \$74 billion. Automobile products (mainly directed to Michigan) dominated Ontario's exports, with \$58 billion split equally between trucking and rail services. Machinery and electronic equipment ranked second at \$11 billion, mainly carried by trucks. Similarly, Ontario's imports from the same US region consisted mainly of automobile products (\$28 billion) and machinery and electronic equipment (\$21 billion). In both cases, trucking services were used to move over 90 per cent of these commodities.

The second most important trade flow involved Ontario and the US Middle Atlantic region, which includes the states of New York, Pennsylvania and New Jersey. Ontario's exports to this region totalled \$29 billion, while imports from this region totalled \$23 billion. A variety of manufactured products were traded between these

two regions, including mainly transportation equipment, automobile products, machinery and electronic equipment, chemical and plastic/rubber products. Trucks carried nearly 85 per cent of this trade.

Table 7-10 shows major trade flows between Canada and the United States in 2000, indicating the modal breakdown for each. Figures 7-8 and 7-9 illustrate the top five Canadian export and import trade flows to and from the United States.

**FIGURE 7-8: CANADA-US TRADE, TOP FIVE SOUTHBOUND TRADE FLOWS, 2000**



Source: Transport Canada

**TABLE 7-10: CANADA-US TRANSBORDER TRADE SHOWING MAIN NORTH-SOUTH TRADE FLOWS, 2000**

		(Billions of dollars)				
Canadian Region	US Region	Exports from Canada	Imports to Canada	Share in Total trade	Main modes used Per cent	(Per cent of total value)
Ontario	US Central East	93.2	73.6	166.9	28.3	Road (76), Rail (22)
Ontario	US Middle Atlantic	29.0	22.5	51.6	8.8	Road (84), Rail (9)
Ontario	US South Atlantic	13.7	18.2	32.0	5.4	Road (81), Rail (10)
Ontario	US Pacific	20.4	10.4	30.8	5.2	Road (47), Rail (27)
Quebec	US Middle Atlantic	17.1	4.7	21.9	3.7	Road (75), Air (13)
British Columbia	US Pacific	12.6	6.9	19.5	3.3	Road (60), Pipeline (23)
Prairies	US Central East	14.5	5.0	19.5	3.3	Road (33), Pipeline (51)
Ontario	US South Central	6.9	11.8	18.8	3.2	Road (80), Rail (16)
Ontario	US Central West	7.9	10.3	18.2	3.1	Road (74), Rail (16)
Ontario	US South West	7.3	10.9	18.1	3.1	Road (70), Rail (18)
Prairies	US Central West	12.3	3.4	15.7	2.7	Road (40), Pipeline (48)
Quebec	US New England	9.9	5.2	15.1	2.6	Road (81), Air (8)
Prairies	US Middle Atlantic	11.2	2.8	14.0	2.4	Road (35), Pipeline (44)
Quebec	US Central East	11.1	2.5	13.6	2.3	Road (56), Rail (34)
Ontario	US New England	7.5	5.3	12.8	2.2	Road (73), Air (19)
Prairies	US Pacific	10.3	2.4	12.7	2.1	Road (34), Pipeline (43)
Quebec	US South Atlantic	9.0	3.1	12.0	2.0	Road (70), Air (17)
<b>Sub-Total:</b>		<b>293.9</b>	<b>199.1</b>	<b>492.9</b>	<b>83.7</b>	
Other		65.4	30.6	96.0	16.3	
<b>Total Canada-US trade:</b>		<b>359.3</b>	<b>229.6</b>	<b>588.9</b>	<b>100.0</b>	<b>Road (65), Rail (16)</b>

Note: US Central includes the states bordering the Great Lakes (Central East) and those of North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West);

US North East refers to New England states and Middle Atlantic states such as New Jersey, New York, and Pennsylvania;

US South includes southern states from the Atlantic coast to the Gulf of Mexico; and

US West refers to US mountain states and Pacific states.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

10 This region includes states bordering the Great Lakes area, i.e. Michigan, Ohio, Illinois, Indiana and Wisconsin. In 2000, Ontario's trade (exports and imports) with these states totalled \$167 billion, including Michigan (\$98 billion), Ohio (\$30 billion), Illinois (\$18 billion), Indiana (\$13 billion) and Wisconsin (\$8 billion).

**FIGURE 7-9: CANADA-US TRADE, TOP FIVE NORTHBOUND TRADE FLOWS, 2000**

(Billions of dollars)



Source: Transport Canada

Several factors explain the growth of Canada's trade with the United States between 1997 and 2000: sustained economic growth in both countries; the reduction of tariffs on goods as a result of trade agreements; and the fluctuations in the exchange rate, which have made Canadian goods relatively less expensive to American consumers.

## CANADA'S TRADE WITH OTHER COUNTRIES

### OVERVIEW

From 1997 to 2000, Canada's trade with countries other than the United States was characterized by stagnant exports that remained more or less unchanged at \$54 billion, and robust imports, which grew from \$88 billion to \$127 billion annually, or at the average yearly rate of 13 per cent growth for the period. The export situation can be explained by the economic difficulties experienced by Asian and Latin American economies starting in 1998, and their slow recovery.

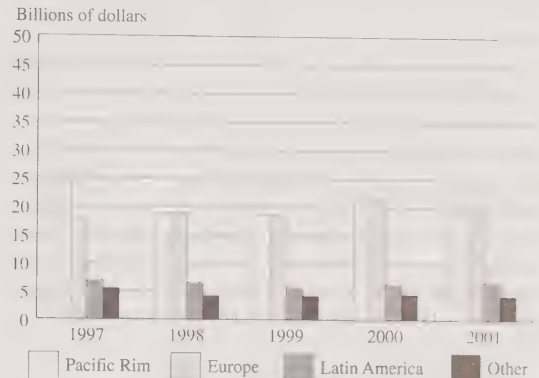
Imports to Canada from countries other than the United States have grown at a higher annual rate (12.8 per cent) than imports from the United States (7.6 per cent). As a result, imports from other countries increased their share of Canada's total imports from 32 to 36 per cent over this period.

The year 2001 marked a pause in global economic growth. Many national economies were affected by the US economic slowdown. As a result, Canada's exports to and imports from countries other than the United States

decreased by five per cent and two per cent, respectively, from 2000 levels.

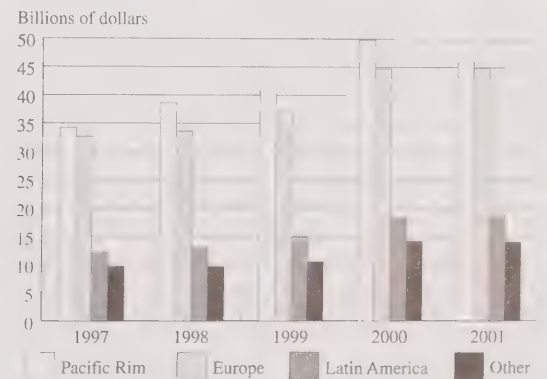
Figures 7-10 and 7-11 illustrate the evolution of Canada's trade with other countries between 1997 and 2001.

**FIGURE 7-10: EXPORTS TO NON-US COUNTRIES, 1997 - 2001**



Source: Statistics Canada, International Trade Division

**FIGURE 7-11: IMPORTS FROM NON-US COUNTRIES, 1997 - 2001**



Source: Statistics Canada, International Trade Division

### TRADE BY MODE

As expected, marine was the dominant mode of transportation in Canada's trade with countries other than the United States, carrying shipments valued at \$90 billion in 2000. This included \$37 billion in exports (70 per cent of Canada's exports to countries other than the United States) and \$53 billion in imports (50 per cent of Canada's imports from countries other than the United States). Air ranked second, capturing a 24 per cent share



for both exports and imports. While the trucking mode recorded a 30 per cent share, it is largely overestimated<sup>11</sup> due partly to transshipments via the United States. Some of this truck traffic should be allocated between the marine and air modes. In terms of value, the increase in the air mode's share, which started in the early 1990s, underlines a growing trend toward moving high-value traded commodities, such as electronic and telecommunications equipment, by air. From 1997 to 2000, electric and electronic material products imported to Canada from countries other than the United States and shipped by air grew at an annual rate of 30 per cent, rising from \$4.9 billion to \$11.1 billion.

In 2001, the value of Canada's trade with overseas countries shipped by the air and marine modes decreased by six per cent. In terms of volume, the marine mode, which was already capturing over 90 per cent of the tonnage shipped between Canada and countries other than the United States, registered an increase of 4.3 per cent in 2001. Table 7-11 shows the value and volume of Canada's trade with countries other than the United States by mode from 1997 to 2001.

**TABLE 7-11: CANADA-NON-US COUNTRIES TRADE BY MODE AND SECTOR, 1997 – 2001**

Year	Billions of dollars	Road	Rail	Marine	Air	Other
<b>Exports<sup>1</sup></b>						
1997	54.2	9.1	1.7	72.8	16.4	0.0
1998	48.5	7.8	1.3	71.3	19.6	0.0
1999	46.8	6.6	1.7	70.9	20.8	0.0
2000	53.6	6.3	1.3	69.6	22.8	0.0
2001	51.0	6.1	1.7	67.9	24.4	0.0
<b>Imports</b>						
1997	88.5	31.3	4.5	40.1	22.0	2.1
1998	95.0	35.9	3.6	37.5	21.8	1.1
1999	104.7	34.7	3.3	38.2	23.3	0.5
2000	127.2	30.9	3.5	41.3	23.8	0.6
2001	124.6	32.2	3.9	40.3	22.0	1.6

Year	Million tonnes <sup>2</sup>	Road	Rail	Marine	Air	Other
<b>Exports</b>						
1997	189.9	1.0	0.2	98.4	0.4	0.0
1998	183.6	0.9	0.2	98.6	0.3	0.0
1999	182.3	1.7	0.3	97.7	0.3	0.0
2000	168.3	2.6	0.7	96.3	0.4	0.0
2001	184.4	2.4	0.3	96.2	1.2	0.0
<b>Imports</b>						
1997	83.4	7.4	1.0	79.7	1.4	10.4
1998	81.2	12.1	1.4	76.5	2.1	8.0
1999	78.0	11.6	1.5	80.7	1.9	4.3
2000	85.3	9.3	1.2	84.8	2.2	2.4
2001	85.2	10.3	1.3	78.8	2.0	7.5

1 Total exports, including domestic exports and re-exports. Preliminary data for 2001.

2 Tonnes estimated based on weight conversion factors developed by Statistics Canada.

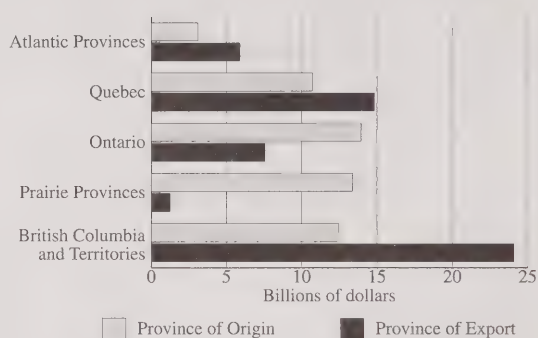
Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations; Transport Canada, adapted from Statistics Canada

## DIRECTION OF TRADE FLOWS

From 1997 to 2000, all provinces had a negative trade balance with countries other than the United States, except Prince Edward Island, the Prairie Provinces and the Northwest Territories. In 2000, Canada's exports to other countries originated almost equally from eastern provinces and western provinces. However, most exports to other countries originating from western provinces were shipped through British Columbia (\$23 billion), mainly through Vancouver, which captured 86 per cent of this total.

Figure 7-12 shows Canada's exports to countries other than the United States in 2000 by province of origin and by province of export (e.g. Ontario generated exports valued at \$13.9 billion, but only \$7.6 billion left the country directly from points in Ontario).

**FIGURE 7-12: EXPORTS TO OTHER COUNTRIES BY PROVINCE OF ORIGIN AND EXPORT, 2000**



Source: Transport Canada adapted from Statistics Canada, Cat. 65-202; special tabulations

## MAJOR TRADE FLOWS

In 2000, six trade flows worth approximately \$10 billion accounted for nearly 75 per cent of Canada's total trade with countries other than the United States. Four of these flows were two-way flows between eastern provinces and Europe (\$15.4 billion in exports and \$41.2 billion in imports) and flows between western provinces and Pacific Rim countries (\$14.9 billion in exports and \$16 billion in imports). The two other trade flows were import-oriented: from Pacific Rim countries to eastern provinces (\$34 billion), and from Mexico to eastern provinces (\$11 billion).

11 In the case of exports, truck and rail information can be used to estimate the importance of Canada's trade with countries other than the United States, routed through the United States. With imports, however, such an estimate is more difficult to determine, as information from customs cargo-control documents may lead to some underestimation of Canadian imports by the marine and air modes.

Trade flows between eastern provinces and Europe totalled \$57 billion and were mainly carried by the marine (54 per cent) and air (34 per cent) modes. Exports from eastern provinces to Europe amounted to \$15 billion and were composed of machinery/equipment products and electronic/electrical materials, and high-value telecommunication and air equipment shipped by air. There were also a variety of manufactured products (non-ferrous products, paper, machinery, chemicals) shipped by the marine mode. Imports to eastern provinces from Europe totalled \$41 billion. Imports shipped by air totalled \$13 billion and consisted of \$5.1 billion in machinery/equipment and electronic materials, \$4 billion in telecommunication and air equipment, and \$3 billion in chemical products. Marine shipments from Europe included \$8.3 billion in mineral fuels, \$3.2 billion in machinery/equipment, and a variety of manufactured products such as automobiles and parts, food products and chemicals.

Trade flows between western provinces and Pacific Rim countries in 2000 totalled \$31 billion and were divided almost equally between exports (\$14.9 billion) and imports (\$16 billion). Most of this trade was carried by the marine (80 per cent) and air (nine per cent) modes. The main exports were forest and paper products at \$5.5 billion, food products at \$3.4 billion, and metallic/non-metallic ores at \$1.5 billion. Imports consisted of \$4.3 billion in automobiles products, plus machinery/equipment, steel and food products (mainly carried by the marine mode), and electronic materials/equipment (mainly carried by air).

Tables 7-12 and 7-13 show the major trade flows between Canada and countries other than the United States in 2000.

## RECENT TRENDS

The years 1997 to 2000 were a period of strong economic growth for the United States with positive results on worldwide trade. However, an economic slowdown started in the last quarter of 2000 and continued through 2001, affecting United States trading partners. The September 11 terrorist attacks aggravated this economic slump in the last quarter of 2001. As a result, in 2001 Canada's trade with the US experienced a decline (-3.2 per cent) for the first time in a decade, led by a decrease in imports from the United States of nearly five per cent. Exports to the United States dropped from \$359 billion to \$351 billion, while imports fell from \$230 billion to \$218 billion.

Figure 7-13 shows monthly variations in Canada's trade with the United States between 2000 and 2001.

**TABLE 7-12: CANADA'S EXPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 2000**  
(Billions of dollars)

Exports to:	Origin		Total	Main Modes Used (Per cent of total value)
	Eastern Provinces	Western Provinces		
Pacific Rim <sup>1</sup>	6.7	14.9	21.5	Marine (83), Air (13)
Europe	15.4	5.9	21.3	Marine (61), Air (37)
Latin America <sup>2</sup>	2.6	1.7	4.3	Marine (57), Road (26)
Mexico	1.3	0.8	2.0	Marine (32), Road (42)
Other	1.9	2.6	4.5	Marine (76), Air (16)
<b>Total</b>	<b>27.7</b>	<b>25.9</b>	<b>53.6</b>	<b>Marine (70), Air (23)</b>

<sup>1</sup> Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India and Pakistan.

<sup>2</sup> Including Antilles, South and Central American countries except Mexico

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

**TABLE 7-13: CANADA'S IMPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 2000**  
(Billions of dollars)

Imports from:	Destination		Total	Main Modes Used (Per cent of total value)
	Eastern Provinces	Western Provinces		
Pacific Rim <sup>1</sup>	33.8	16.0	49.8	Marine (41), Road (33)
Europe	41.2	3.5	44.7	Marine (52), Air (31)
Mexico	11.0	1.1	12.1	Road (67), Rail (22)
Latin America <sup>2</sup>	5.7	0.7	6.4	Marine (51), Road (33)
Other	12.9	1.3	14.2	Road (38), Marine (37)
<b>Total</b>	<b>104.7</b>	<b>22.5</b>	<b>127.2</b>	<b>Marine (41), Road (31)</b>

<sup>1</sup> Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India and Pakistan.

<sup>2</sup> Including Antilles, South and Central American countries except Mexico

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

**FIGURE 7-13: CANADA - US TRADE, VALUE OF GOODS CARRIED, 2000 - 2001**



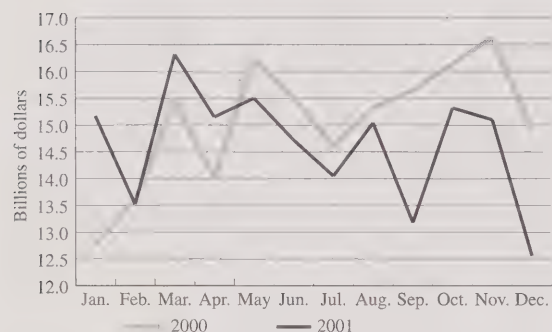
Note: Includes total exports and imports

Source: Transport Canada, adapted from Statistics Canada, Cat. 65-001, special tabulations

On the world economic scene, the period between 1997 and 2000 was marked by financial crises and a recession that started in Japan in 1998 and then spread to neighbouring Asian countries and Latin America. The economies of these countries were slow to recover, and the 2001 US economic slowdown just accentuated financial and economic problems in countries such as Japan and Argentina. Consequently, Canada's trade with countries other than the United States registered a three per cent decline as Canada's exports to these countries decreased by nearly five per cent from 2000 to 2001. Imports to Canada from countries other than the United States were relatively stagnant, as their value fell from \$127 billion to \$125 billion.

Figure 7-14 shows monthly variations in Canada's trade with countries other than the United States between 2000 and 2001.

FIGURE 7-14: CANADA – OTHER COUNTRIES TRADE, VALUE OF GOODS CARRIED, 2000 – 2001



Note: Including total exports to and imports from other countries than the United States.

Source: Transport Canada, adapted from Statistics Canada, Cat. 65-001; special tabulations

On a country basis, Canada's trade with selected Asian economies such as Japan, South Korea, Malaysia and Taiwan declined on average by 13 per cent from 2000 to 2001, with the exception of the Peoples Republic of China registering an increase of 12 per cent. Canada's trade with western European countries experienced a decline in exports (-5.2 per cent) and a marginal increase (1.3 per cent) in imports in 2001. Trade with the United Kingdom decreased by 13 per cent and Norway showed a 17 per cent decrease, compared with 2000.

Tables 7-14 and 7-15 show Canada's external trade by country groupings in 2000 and 2001.

TABLE 7-14: CANADIAN EXPORTS BY COUNTRY GROUPINGS, 2000 AND 2001

(Billions of dollars)			
<i>Destination</i>	2000	2001	<i>Growth rate (per cent)</i>
<b>United States</b>	<b>359.3</b>	<b>351.5</b>	<b>(2.2)</b>
<b>Non-US countries</b>	<b>53.6</b>	<b>51.0</b>	<b>(4.9)</b>
Japan	9.2	8.1	(11.4)
Peoples Republic of China	3.7	4.2	14.6
Other Asia	8.1	7.0	(12.9)
Mexico	2.0	2.5	20.4
Other Latin America <sup>1</sup>	4.3	4.2	(0.8)
Western Europe	20.5	19.5	(5.2)
Other Countries <sup>2</sup>	5.8	5.4	(6.9)
<b>Total World</b>	<b>412.9</b>	<b>402.4</b>	<b>(2.5)</b>

Note: Preliminary data for 2001; including domestic exports and re-exports.  
<sup>1</sup> Including Antilles, South and Central American countries, except Mexico.  
<sup>2</sup> Including Oceania, Middle East, Africa and other Europe.

Source: Statistics Canada, Cat. 65-001 December 2001; special tabulations

TABLE 7-15: CANADIAN IMPORTS BY COUNTRY GROUPINGS, 2000 AND 2001

(Billions of dollars)			
<i>Origin</i>	2000	2001	<i>Growth rate (per cent)</i>
<b>United States</b>	<b>229.7</b>	<b>218.4</b>	<b>(4.9)</b>
<b>Non-US countries</b>	<b>127.2</b>	<b>124.6</b>	<b>(2.0)</b>
Japan	16.6	14.6	(11.8)
Peoples Republic of China	11.3	12.7	12.6
Other Asia	21.6	19.1	(11.9)
Mexico	12.1	12.1	0.4
Other Latin America <sup>1</sup>	6.4	6.7	5.3
Western Europe	42.8	43.4	1.3
Other Countries <sup>2</sup>	16.4	16.0	(2.2)
<b>Total World</b>	<b>356.9</b>	<b>343.0</b>	<b>(3.9)</b>

Note: Preliminary data for 2001.  
<sup>1</sup> Including Antilles, South and Central American countries, except Mexico.  
<sup>2</sup> Including Oceania, Middle East, Africa and other Europe.

Source: Statistics Canada, Cat. 65-001 December 2001



# TRANSPORTATION AND TOURISM

# 8

*A fall in travel and tourism spending was observed in 2001 as a result of the economic slowdown and the September 11 events.*

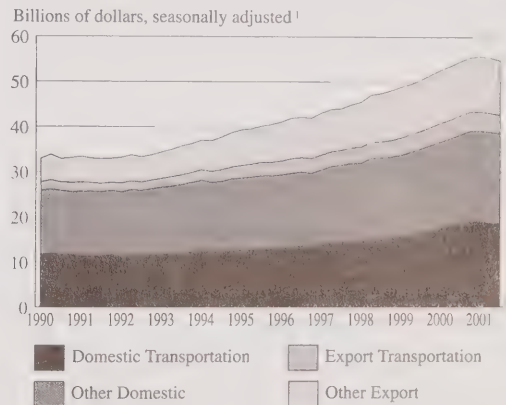
In this chapter, the United Nations World Tourism Organization, Statistics Canada and the Canadian Tourism Commission definition of tourism is used: people travelling to and staying in places outside their usual environment for leisure, business and other purposes for no longer than one year. For Canadians travelling within Canada, a trip must be at least 80 kilometres from the traveller's place of residence to be considered as tourist travel. International travel refers to travel to or from Canada.

Tourism spending in Canada by Canadians and foreign visitors is examined, including spending on transportation. The value of spending by foreigners travelling in Canada is compared with spending by Canadians travelling outside Canada.

A broad overview of international travel by distribution, purpose and mode is presented, special attention is given to travel between Canada and the United States and between Canada and countries other than the United States.

Figure 8-1 shows the trends in the distribution of tourism spending since 1990, including the decline in 2001. (Domestic expenditures are by Canadians in Canada, while export expenditures are by foreigners in Canada.)

**FIGURE 8-1: TOURISM SPENDING IN CANADA, 1990 – 2001**



<sup>1</sup> Quarterly data at annual rates.

Source: Statistics Canada, Cat. 13-009

## TOURISM EXPENDITURES

### TOURISM SPENDING IN CANADA

Spending on tourism in Canada reached \$54.1 billion in 2000, up 7.9 per cent from 1999. This growth did not continue in the first three quarters of 2001. Third quarter expenditures fell 1.8 per cent from the second quarter, which had declined 0.4 per cent from the first quarter. These declines were the first two consecutive quarter declines in ten years. The fall in tourism spending in 2001 reflected the fall in fuel prices as well as the economic slowdown and the events of September 11.

### SPENDING ON TRANSPORTATION

Tourism expenditures on transportation totalled \$22.4 billion in 2000, up 11.6 per cent from 1999, when they rose 8.5 per cent. Higher fuel prices were an important factor. Transportation spending accounted for 41.5 per cent of all tourism spending in 2000, up from 40.1 per cent in 1999. In the first three months of 2001, spending on transportation rose to 3.2 per cent compared to the first three months of 2000.

TABLE 8-1: TOURIST SPENDING IN CANADA ON TRANSPORTATION AND OTHER MAJOR CATEGORIES, 2000

	<i>Domestic (Millions of dollars)</i>	<i>Per cent change 1999/2000</i>	<i>Exports (Millions of dollars)</i>	<i>Per cent change 1999/2000</i>	<i>Total (Millions of dollars)</i>	<i>Per cent change 1999/2000</i>
Transportation	18,177	12.4	4,240	8.2	22,417	11.6
Passenger Air Transport	10,533	11.7	2,348	8.2	12,881	11.1
Passenger Rail Transport	158	9.7	92	4.5	250	7.8
Interurban Bus Transport	431	4.6	206	2.5	637	3.9
Vehicle Rental	381	5.5	679	4.0	1,060	4.5
Vehicle Repairs and Parts	2,110	10.6	84	1.2	2,194	10.3
Vehicle Fuel	4,069	17.7	559	19.2	4,628	17.9
Other Transportation	495	7.8	272	6.7	767	7.4
Accommodation	3,794	4.3	3,666	7.1	7,460	5.7
Food and Beverage Services	4,841	6.1	3,683	4.0	8,524	5.2
Other Tourism Commodities	3,938	7.9	1,494	4.9	5,432	7.1
Total Tourism Commodities	30,750	9.8	13,083	6.3	43,833	8.7
Total Other Commodities	7,131	4.7	3,112	4.4	10,243	4.6
<b>Tourism Expenditures</b>	<b>37,881</b>	<b>8.8</b>	<b>16,195</b>	<b>5.9</b>	<b>54,076</b>	<b>7.9</b>

Source: Statistics Canada, Cat. 13-009

In 2000, spending on air transportation made up more than half (57.5 per cent) of transportation-related tourism spending, totalling \$12.9 billion. This was an 11.1 per cent increase from 1999. Tourism spending on motor vehicle transportation made up just over one third (35.2 per cent) of total spending. The amount spent on vehicle fuel rose by 17.9 per cent, after increasing by 11.1 per cent in 1999. Intercity bus transport accounted for 2.8 per cent of transportation-related tourism spending, compared with 3.1 per cent in 1999, while the rail share was down marginally, at 1.1 per cent of the total. Spending on other forms of transportation, including water transport, urban transit, taxi and parking, made up 3.4 per cent.

Table 8-1 shows tourism spending on transportation in relation to other tourist goods in 2000.

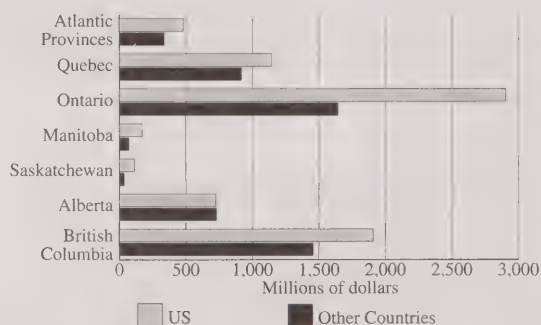
## DISTRIBUTION OF SPENDING

In 2000, tourism expenditures in Canada totalled \$54.1 billion. About 70 per cent of this, or \$37.9 billion, was spent by Canadians, with the rest being spent by foreign visitors. This 30 per cent share of tourism spending by foreign visitors has been constant for the past three years. Domestic spending rose 8.8 per cent in 2000, up from the six per cent increase in 1999; foreign spending rose 5.9 per cent, down from the 7.7 increase in 1999. In the first three quarters of 2001, spending by foreign visitors to Canada rose 3.1 per cent, while spending by Canadians in Canada rose 2.1 per cent.

As Figure 8-2 shows, Ontario benefited the most from spending by international visitors. In 2000, 38 per cent of spending by international tourists occurred in Ontario, while 28 per cent was spent in British Columbia, 17 per cent in Quebec, 12 per cent in Alberta and seven per cent in the Atlantic Provinces. The remaining

three per cent was spent in Manitoba and Saskatchewan. Tourism spending rose in all regions, but more so in the Prairie Provinces, where it rose 18 per cent in Saskatchewan, 11 per cent in Alberta and ten per cent in Manitoba. Spending rose by about five per cent in the Atlantic Provinces, Quebec and Ontario. The lowest rate of increase occurred in British Columbia, where it grew by only 2.2 per cent, reflecting a 0.6 per cent increase in spending by visitors from countries other than the United States.

FIGURE 8-2: EXPENDITURES BY OVERNIGHT NON-RESIDENT VISITORS BY PROVINCE, 2000



Note: Staying one night or more in Canada.

Source: Statistics Canada, Cat. 66-201

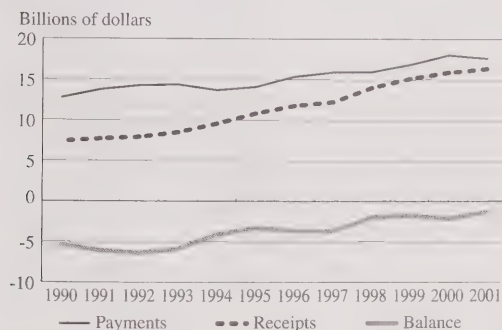
## THE TRAVEL ACCOUNT AND INTERNATIONAL PASSENGER FARES

### TRAVEL DEFICITS

In 2001, Canada's travel deficit was reduced sharply by 22 per cent to \$1.3 billion, the lowest travel deficit since 1986. This was the result of record spending by foreign visitors inside Canada combined with reduced spending outside the country by Canadians. Figure 8-3 shows these trends.

Foreigners spent a record of \$16.3 billion in Canada in 2001. Even with decreases in the final three quarters, this figure was up 2.8 per cent from 2000. Spending by Canadians fell 2.2 per cent to \$17.6 billion. The increase in foreign spending in Canada was because a 5.9 per cent increase in spending by Americans (to \$10.2 billion) offset a decrease of two per cent (to \$6.2 billion) by tourists from other countries. Canadians increased their spending outside the United States by 3.3 per cent (to \$6.9 billion) while reducing their spending in the United States (to \$10.7 billion). This was a 5.4 per cent decrease from the \$11.3 billion Canadians spent in the United States the previous year. As a result, the travel deficit with the United States fell from \$1.7 billion to \$502 million. The deficit with other countries, however, increased to \$790 million from \$446 million.

FIGURE 8-3: CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1990 - 2001



Source: Statistics Canada, Cat. 66-201

### INTERNATIONAL PASSENGER FARES

Receipts from sales of passenger fares to foreign visitors fell 5.4 per cent in 2001 to \$3.02 billion while payments by Canadians to purchase passenger fares from foreign carriers rose 2.4 per cent to \$4.18 billion. The result of this was a 30.5 per cent increase in the passenger fare deficit to \$1.16 billion. Air fares are the

most important component of passenger fares. Sales of air fares fell 4.9 per cent to \$2.92 billion while purchases for air fares from foreign carriers increased 4.2 per cent to \$3.97 billion leaving a deficit of \$1.01 billion, a 37.5 per cent increase. Receipts from sales of passenger fares for water transport to foreigners rose 60 per cent to \$24 million while purchases by Canadians from foreign carriers increased 22.1 per cent to \$116 million increasing the deficit 15 per cent to \$92 million. For land transport, Canadians spent \$92 million to purchase from foreign carriers, unchanged from the previous year while foreigners increased their purchases of fares by 8.8 per cent to \$37 million. Of these land fares there were \$7 million in purchases for rail transportation by foreigners and \$2 million in purchases by Canadians.

## TRAVEL OVERVIEW

### DOMESTIC TRAVEL

Due to a reworking of the Labour Force Survey, which is used by the Canadian Travel Survey, no domestic travel data was available for 2000 at the time of publication.

### INTERNATIONAL TRAVEL

In 2001, 90.3 million international travellers crossed Canadian borders, 5.7 per cent fewer than in 2000. All types of international travel declined except for Canadian travellers to countries other than the United States. Also in 2001, 43.2 million Canadians travelled outside Canada,

TABLE 8-2: INTERNATIONAL TRAVEL SUMMARY, 2000 AND 2001

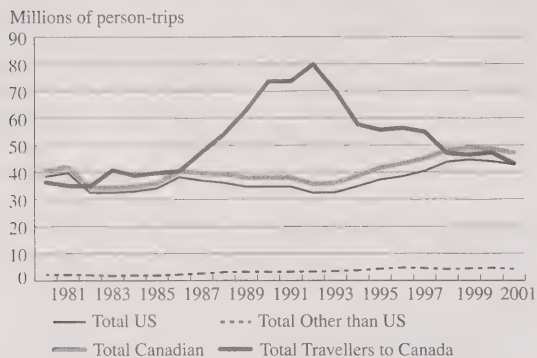
	2001 Person- trips (000)	2000 Person- trips (000)	Duration (nights)	Average Spending (\$)
<b>Total</b>	<b>90,347</b>	<b>95,819</b>		
<b>Canadians</b>	<b>43,201</b>	<b>47,182</b>	-	<b>351</b>
to United States	38,368	42,666	-	236
Same Day	24,850	28,019	-	39
Overnight	13,518	14,648	7.0	612
to Other Countries	4,832	4,515	15.8	1,439
<b>Americans</b>	<b>42,871</b>	<b>43,994</b>	-	<b>210</b>
Same Day	27,342	28,769	-	63
Overnight	15,528	15,225	3.9	489
<b>Non-US Residents</b>	<b>4,275</b>	<b>4,644</b>	-	<b>1,119</b>
Same Day	166	205	-	41
Overnight	4,109	4,439	11.2	1,181

Source: Statistics Canada, Cat. 66-201



8.4 per cent fewer than in 2000, while 42.9 million Americans came to Canada, a drop of 2.6 per cent and 4.3 million overseas visitors came to Canada, a 7.9 per cent drop. Table 8-2 gives an overview of international travel in 2000 and 2001, and Figure 8-4 illustrates these trends over a longer period.

**FIGURE 8-4: INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 – 2001**



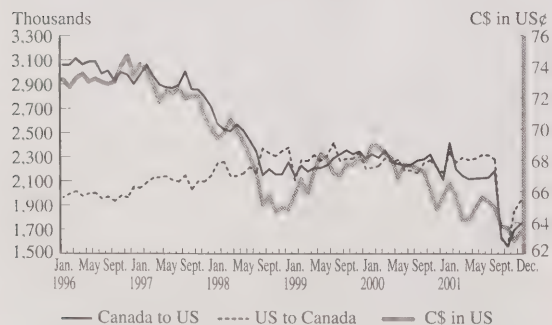
Source: Statistics Canada, Cat. 66-201

## CANADA – US TRAVEL

In 2001, total Canada–United States travel fell sharply in both directions, by 6.3 per cent, to 81.2 million. The largest drop was observed in Canadian same-day trips, which fell by 8.1 per cent and made up only 64.2 per cent of all transborder trips. As figures 8-5 and 8-6 show, there was a sharp decline in transborder travel following the events of September 11, with a partial recovery in November and December.

**FIGURE 8-5: SAME-DAY CANADA–US AUTOMOBILE EXCURSIONS, 1996 – 2001**

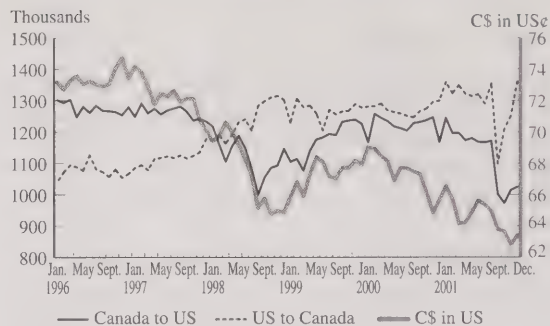
(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

**FIGURE 8-6: OVERNIGHT CANADA–US EXCURSIONS, 1996 – 2001**

(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

Reflecting the impacts of September 11, the change in the value of the Canadian dollar relative to the US currency and the economic slowdown, same-day trips by Canadians in 2001 fell by 11.3 per cent to 24.9 million, while American same-day travel fell by five per cent to 27.3 million. Overnight trips by Canadians fell by 7.7 per cent to 13.5 million, while overnight trips by Americans rose two per cent to 15.5 million. For the fourth year in a row, American overnight trips to Canada exceeded overnight trips in the opposite direction.

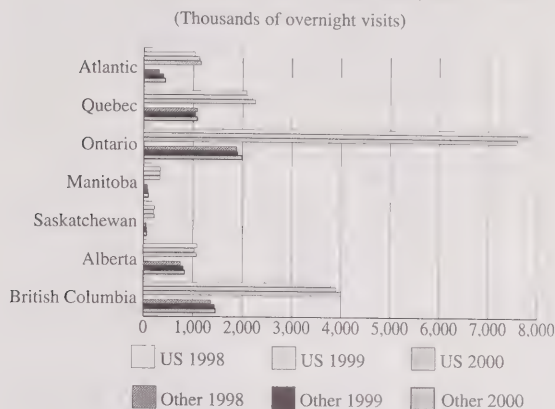
## Distribution of Travel

In 2000, the most recent year for which annual data is available, the most popular destination for Canadians visiting the United States were generally unchanged from those in 1999. New York and Michigan accounted for 18 and eight per cent, respectively, of the total same-day visits, while Pennsylvania and Vermont each accounted for six per cent. The top States for overnight stays remained New York (12 per cent of total trips in 2000), Florida (ten per cent), Washington (eight per cent), Michigan (six per cent) and California (five per cent). In the third quarter of 2001, the border States received fewer visitors from Canada. New York remained the most popular destination but received 9.2 per cent fewer visitors than in the third quarter of 2000.

In 2000, the Atlantic Provinces, Quebec and British Columbia all received record numbers of overnight visitors from the United States. Ontario remained the most popular province by far for Americans, accounting for 46 per cent of the overnight trips. However, 2000 was the second year in a row with a decline. British Columbia accounted for 24 per cent and Quebec for 14 per cent of American overnight visitors, while six per cent went to Alberta and seven per cent to the Atlantic Provinces.

Figure 8-7 shows the number of non-residents entering Canada and staying overnight, by province, from 1998 to 2000.

**FIGURE 8-7: DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1998 - 2000**



Source: Statistics Canada, Cat. 66-201

## Purpose of Travel

In 2000, the purposes for which travel between Canada and the United States were undertaken remained consistent with previous years. More than half (53 per cent) of Canadian overnight trips were for pleasure-related purposes, as were US overnight trips (56 per cent). Trips to visit friends and relatives made up 20 per cent of the trips by Canadians and 19 per cent of US trips, while business trips made up 19 per cent of Canadian trips and 16 per cent of US trips. However, business trips fell dramatically in the third quarter of 2001, following the events of September 11, 2001. The number of Canadians going to the United States for business fell 21.9 per cent from the third quarter of 2000, while the number of Americans coming to Canada on business fell 27.2 per cent.

## Means of Travel

The events of September 11 caused shifts in the modal choice of travel between the United States and Canada. There were declines in all major categories other than overnight trips by Americans by car, but the declines were greatest in air travel.

The number of Canadians on overnight trips to the United States by air fell by 708,000 person-trips, or 13.2 per cent in 2001, while overnight trips by automobile fell by 374,000 person-trips, or 4.7 per cent. Consequently, the modal share of air fell to 34.4 per cent from 36.5, reversing the increase in air's modal share that

occurred over the past decade. Automobile's share rose from 54.4 per cent to 56.2 per cent. US overnight trips by air fell by 124,000 person-trips, or 3.2 per cent, while overnight trips by automobile increased by 431,000 person-trips, or 4.6 per cent. Air's share of American overnight trips fell to 24.1 per cent from 25.4 per cent, while automobile trips share rose to 63.7 per cent from 62.1 per cent.

There was no change in the modal proportions for same-day travel, and the automobile remained the dominant mode. In 2001, the automobile accounted for 96.8 per cent of Canadian trips and 92.6 per cent of American trips. Bus transport was the next most important, accounting for 2.4 per cent of Canadian trips and 3.6 per cent of US trips.

Table 8-3 shows the means of travel for both overnight and same-day trips between Canada and the US in 2001.

**TABLE 8-3: CANADA-US TRAVEL BY MODE, 2001**

	Canadians		Americans	
	Total	Per cent	Total	Per cent
<b>Same Day</b>	<b>24,850</b>	<b>100.0</b>	<b>27,342</b>	<b>100.0</b>
Auto	24,048	96.8	25,313	92.6
Plane	105	0.4	480	1.8
Bus	589	2.4	976	3.6
Other	109	0.4	573	2.1
<b>Overnight</b>	<b>13,518</b>	<b>100.0</b>	<b>15,529</b>	<b>100.0</b>
Auto	7,593	56.2	9,889	63.7
Plane	4,645	34.4	3,748	24.1
Bus	629	4.7	708	4.6
Boat	136	1.0	434	2.8
Foot	373	2.8	572	3.7
Other	142	1.0	177	1.1
<b>Total</b>	<b>38,368</b>		<b>42,871</b>	

Source: Statistics Canada, Cat. 66-201

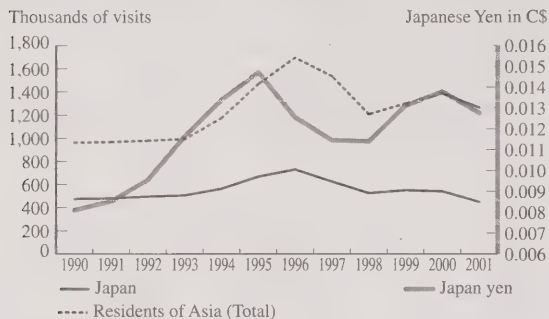
## TRAVEL BETWEEN CANADA AND OTHER COUNTRIES THAN THE UNITED STATES

### Overseas Travel to Canada

The number of overseas visitors to Canada declined in 2001 by 7.9 per cent to 4.32 million after increasing for the past two years. This decline reflects the economic slowdown and the September 11 events. The number of visitors from both Asia and Europe fell. The declines were very widespread with only increases in the number of visitors from a few countries including China, India, South Korea and Mexico. The number of visitors from Asia fell 8.9 per cent. Visitors from Japan declined 16.9 per cent to 449,000, reflecting the decline in the yen and the Japanese recession. The number of visitors from Taiwan fell by 27.9 per cent to 157,000 and those from

Hong Kong fell by 10.4 per cent to 130,000. Only 2.3 million visitors, a reduction of 8.5 per cent, came from Europe. While the number of visitors from the United Kingdom only fell by 4.9 per cent to 876,000, the numbers from France and Germany fell, respectively, by 11.6 per cent to 368,000 and by 13.7 per cent to 360,000. Figures 8-8 and 8-9 show some important exchange rates and international visitor flows and Figure 8-10 shows the country of origin of the visitors to Canada in the last three years.

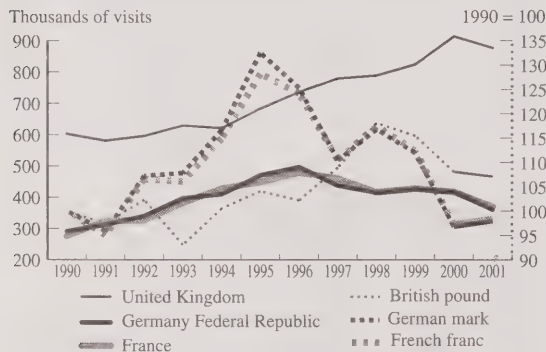
FIGURE 8-8: VISITORS TO CANADA FROM ASIA, 1990 – 2001



Note: Indices for exchange rates are foreign currencies in terms of C\$.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

FIGURE 8-9: VISITORS TO CANADA FROM MAJOR EUROPEAN COUNTRIES, 1990 – 2001



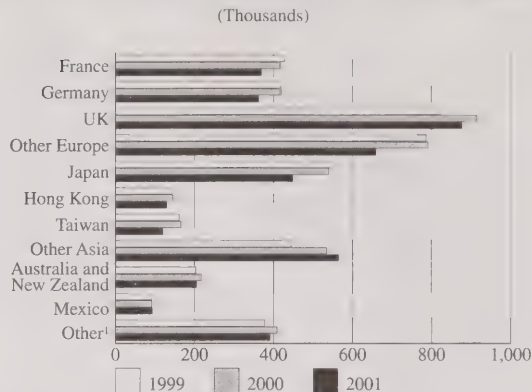
Note: Indices for exchange rates are foreign currencies in terms of C\$ converted into an index with 1990 as the base year.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

## Distribution of Travel

Figure 8-7 shows the destination of overseas visitors by region for 2000. The number of visitors to all regions increased over 1999. Overseas visitors to the Atlantic Provinces increased by 10.7 per cent while those to

FIGURE 8-10: VISITORS TO CANADA FROM COUNTRIES OTHER THAN THE UNITED STATES, 1999 – 2001



1 St. Pierre & Miquelon, Caribbean, Mexico and Oceania (including Australia).

Source: Statistics Canada, Cat. 66-201

British Columbia only grew by 0.6 per cent. The regional shares remained stable, with Ontario attracting the largest proportion, 33 per cent of the overseas visitors, British Columbia 24 per cent and Quebec 18 per cent. Alberta was the destination for 14 per cent and Atlantic Canada for seven per cent of overseas visitors with the remaining three per cent going to Manitoba and Saskatchewan.

## Canadian Travel Overseas

In contrast to the decline in overseas visitors in 2001, Canadians increased their visits to countries other than the United States. These trips increased by seven per cent following an increase of 6.2 per cent in 2000. Trips to Europe increased by 7.9 per cent in 2000, the most recent year for which destination information is available. Trips to the United Kingdom, the most popular foreign country of destination for Canadians, fell by two per cent but trips to Germany jumped 22 per cent and trips to France rose eight per cent. Trips to Mexico, the second most popular destination jumped by 20 per cent while trips to Cuba fell by 22 per cent after almost doubling in 1999. The number of cruise trips rose by 4.2 per cent. Figure 8-11 shows the destinations for Canadian travel for the years, 1998 to 2000.

## Overseas Travel: Purpose and Mode of Travel

Pleasure trips continue to make up the greatest proportion of trips by Canadians overseas accounting for 59.6 per cent in 2000; this proportion is almost unchanged from the previous year. Similarly the proportion of trips for visiting friends and relatives remained almost the same at 17.8 per cent as the proportion for business at 16.9 per cent. The purposes of trips by overseas visitors



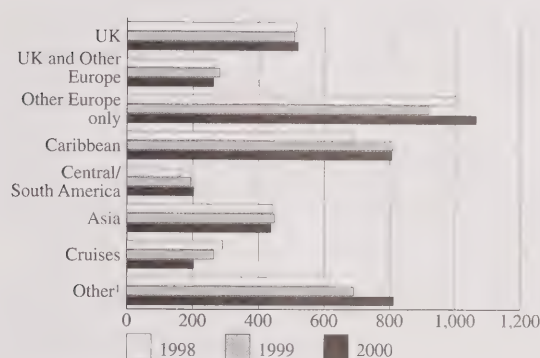
**TABLE 8-4: PURPOSE OF TRIP FOR OVERSEAS TRAVEL, 1990 AND 2000**

Trip Purpose	(Per cent of person-trips)			
	Canadians		Non-residents (Non-US)	
	1990	2000	1990	2000
Business	14.3	16.9	18.1	17.8
Visiting Friends and Relatives	18.4	17.8	31.8	28.4
Pleasure	61.1	59.6	45.3	49.1
Other	6.3	5.7	4.8	4.6
Total	100.0	100.0	100.0	100.0

Source: Statistics Canada, Cat. 66-201

**FIGURE 8-11: CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES, 1998 – 2000**

(Thousands)

<sup>1</sup> Mexico, Caribbean, Central and South America and Africa.

Source: Statistics Canada, Cat. 66-201

also remained unchanged in 2000 compared with 1999. Pleasure trips were the most important, with a 49.1 per cent share of total trips. Visiting friends and relatives was the main purpose for 28.4 per cent of trips, a share ten per cent higher than for Canadians travelling. Business trips made up 17.8 per cent of trips, almost the same as for Canadian overseas trips.

Air is the most common means of transport for trips to and from overseas countries accounting for 83.4 per cent of trips by foreign visitors and almost 100 per cent of Canadians returning from abroad. The number of overseas visitors entering Canada by land from the United States fell by 19 per cent to 618,000, reducing the share of such visitors to 14.5 per cent, compared with the 16.4 per cent share in 2000 and down from the 30 per cent share observed in the early 1990s. Corresponding with this decline the percentage entering by air rose from 81.8 per cent to 83.4 per cent. There was an increase in the share of overseas visitors flying directly to Canada rather than via the United States — rising to 63.3 per cent from 61.8 per cent — this share has risen sharply in the last five years from the just over 50 per cent of the early 1990s. While the number of Canadians taking trips overseas rose in 2001, the number of Canadians returning via the United States fell by 2.7 per cent.



*Canada's transportation infrastructure is vital to personal travel and goods movements in and between provinces, territories, urban areas and remote regions.*

Canada's transportation infrastructure is made up of a network of roads, railway lines, airports, ports and waterways allowing people and goods to move across the country from coast to coast and to the Far North, as well as to other countries.

This chapter presents the most current status of Canada's transportation infrastructure and also addresses some essential incidental services.

## RAIL TRANSPORTATION INFRASTRUCTURE

The Canadian rail network changed only marginally in 2001, with an aggregate reduction in network size of about 0.1 per cent. While there were relatively few discontinuances of trackage during 2001, there were also few transfers of rail lines to other operators. This meant that 2001 was the year with the least amount of trackage transferred in the past decade. Network changes in 2001 stand in contrast to the high rate of shortline<sup>1</sup> formation that occurred in the latter half of the 1990s.

At the present time, the network is stable, with the two Class I carriers — Canadian National (CN) and Canadian Pacific Railways (CPR) — accounting for roughly two thirds of the rail network in Canada (measured in route-kilometres), and the regional and shortline railways accounting for most of the remainder.

Table 9-1 illustrates the distribution of trackage by key carriers and carrier groups.

Railways in Canada fall under federal jurisdiction if their operations cross provincial boundaries or international borders, or if they opt to be incorporated federally even

**TABLE 9-1: RAILWAYS IN CANADA, 2001**

	2001 owned/ leased route- kilometres	2000 owned/ leased route- kilometres <sup>1</sup>	Per cent of total (2001)	Percentage change over previous year
CN	19,098	19,186	38.3	(0.5)
CPR	14,011	14,067	28.1	(0.4)
Regional and Shortline Railways	15,908	15,805	31.9	0.7
All Others <sup>2</sup>	814	814	1.6	(0.0)
<b>Total</b>	<b>49,831</b>	<b>49,873</b>		<b>(0.1)</b>

Note: By definition, route-kilometres do not include parallel trackage, spurs, sidings and yard trackage.

1 2000 trackage revised slightly to reflect improved data.

2 Terminal and switching railways, Canadian subsidiaries of US railroads and passenger railways

Source: Transport Canada

though their operations fall within a single province. In 1990, about 93 per cent of railway trackage in Canada (in route-kilometres) fell under federal jurisdiction. Approximately four per cent of this trackage belonged to Class II and III railways and the remainder belonged to the two Class I carriers. As the Class I carriers transferred trackage to other carriers, the percentage of Canadian trackage that was federally regulated steadily declined to its 2001 level of 78.6 per cent. The amount of Class II and III trackage under federal regulation remained less than four per cent until 1996, when it began to increase rapidly. As of 2001, 15.4 per cent of Class II and Class III trackage was under federal regulation.

Table 9-2 shows the distribution of railway trackage in Canada in 2001.

## RATIONALIZATION

When railways find it no longer economically attractive to operate sections of track, they often transfer control of the track to another operator or discontinue using that section of track (called abandonment).

1 Shortlines are smaller railways that usually operate as an affiliate of a Class I carrier. They are distinguished from the larger, regional railways that have operated for many years in Canada, the small Class II and Class III railways, and Canadian subsidiaries of US carriers.



**TABLE 9-2: FEDERAL AND PROVINCIAL DISTRIBUTION OF TRACK, 1990 AND 2001**

	1990		2001	
	Route kilometres	Per cent of total	Route kilometres	Per cent of total
Federal Class I	50,782	89.3	33,109	66.4
Federal Class II/III	1,904	3.3	6,019	12.1
Provincial Class II/III	4,180	7.4	10,703	21.5

Source: Transport Canada

In the past three decades, railways have significantly rationalized railway track due to reduced demand on certain lines, changing transportation requirements, competition from trucking and, perhaps most importantly, an economic imperative to reduce costs. Canadian railways have shed about 28,800 kilometres of track since 1970, most of this by CN and CPR. However, not all of this trackage has been abandoned. Emulating the US shortline model that emerged after the passage of the *Staggers Act* in 1980, Canadian shortlines began proliferating with the passage of the *Canada Transportation Act* in 1996. Before 1996, carriers had abandoned about 13,660 kilometres of track and transferred 1,550 kilometres to shortline operators. After mid-1996, carriers transferred over 9,800 kilometres of track to shortline operators and abandoned about 3,780 kilometres.

Since 1990, carriers rationalized slightly more than 20,000 route-kilometres of track, approximately 55 per cent of which was transferred to shortline carriers. Canadian National accounted for the most track rationalized — slightly more than 58 per cent of total rationalized track — while rationalization by shortline carriers accounted for slightly more than four per cent. CPR accounted for the remainder of track rationalization.

Table 9-3 shows the amount of track rationalized by Canadian railways since 1990.

The greatest rationalization occurred in Alberta and Ontario, with approximately 4,000 kilometres of track rationalized in each province. In Alberta, trackage transferred to shortline carriers was nearly double the amount that was abandoned. In Ontario, however, essentially the same amount of track was discontinued as was transferred to other carriers. While most of the other provinces saw greater track transfers than abandoned track, Saskatchewan was a notable exception, with almost 58 per cent of its rationalized track being abandoned. It should be noted that approximately 900 kilometres of low-density grain line in western Canada (predominantly in Saskatchewan) were abandoned pursuant to the *Canada Transportation Act* when it came into force in 1996.<sup>2</sup>

The amount of track rationalized has varied annually. Since 1990, for example, rationalized trackage has ranged from a high of 3,850 kilometres (1996) to a low of 450 kilometres (1991). Of the 145 kilometres of track that was rationalized during 2001, approximately 29 per cent of it was abandoned. This represents a striking departure from the levels of rationalization that occurred in the past.

Table 9-4 illustrates the nature and extent of rationalization by province during 2001.

Both CN and CPR will continue to rationalize their networks in the future. There are already signs, however, that a period of second order railway rationalization has begun and will likely continue for a period of time. The term "second order rationalization" alludes to the impetus to rationalize coming from the recently emerged shortline operator. Canadian National and CPR may be involved in

**TABLE 9-3: RAILWAY RATIONALIZATION BY PROVINCE, 1990 – 2001**

(Route-kilometres)										
		British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	New Brunswick	Nova Scotia	Northwest Territories
Discontinuances	CPR	510	581	984	137	409	784	429	242	0
	CN	5	381	647	880	1,417	499	79	227	87
	Other	0	362	34	0	87	0	0	0	0
	Total	516	1,324	1,666	1,017	1,912	1,283	508	469	87
Transfers	CPR	365	253	682	0	967	829	190	85	0
	CN	168	2,102	610	1,727	996	1,015	328	378	122
	Other	0	360	0	0	67	0	0	0	0
	Total	534	2,716	1,291	1,727	2,031	1,845	518	463	122
Total	CPR	876	834	1,666	137	1,376	1,614	619	328	0
	CN	174	2,483	1,257	2,607	2,413	1,514	407	604	210
	Other	0	722	34	0	154	0	0	0	0
	Total	1,049	4,040	2,957	2,744	3,943	3,128	1,026	932	210

Source: Transport Canada

2 This distinction was made because rationalization, whether discontinuances or transfers, is normally initiated by the carriers themselves and follows processes established in legislation (the process was changed in 1996 with the passage of the *Canada Transportation Act*).

**TABLE 9-4: RAILWAY RATIONALIZATION BY PROVINCE, 2001**

		(Route-kilometres)			
		Alberta	Saskatchewan	Ontario	Total
Discontinuances	CPR	0	0	19.1	19.1
	CN	0	0	22.2	22.2
	Total	0	0	41.3	41.3
Transfers	CPR	37.5	0	0	37.5
	CN	0	65.7	0	65.7
	Total	37.5	65.7	0	103.2
Total	CPR	37.5	0	19.1	56.6
	CN	0	65.7	22.2	87.9
	Total	37.5	65.7	41.3	144.5

Note: Only provinces with rationalization shown in table.

Source: Transport Canada

it insofar as the trackage originally transferred was through lease and not outright sale.

Some examples of second-order rationalization include the transfer of a portion of RailAmerica's Lakeland & Waterways shortline operation to the Athabasca Northern Railway in 2001, and the discontinuance of other Lakeland & Waterways trackage.<sup>3</sup> RailAmerica, the largest owner of shortlines in Canada, with eight operations, announced in late 2001 that it was planning to cease operations on its E&N Railway in March 2002. The announcement followed the loss of a significant volume of rail traffic when one of its major shippers decided to begin shipping by truck.

The impact that the loss of a single dominant shipper has on a shortline illustrates the risk faced by shortlines that lack a diversified traffic base or that cannot weather economic or financial shocks.

### THREE-YEAR PLANS

Federally regulated railways must make their discontinuance intentions public in the form of plans that encompass the forthcoming three-year period. In the past, these plans were updated relatively frequently. In keeping with the declining pace of rationalization, the frequency of these updates is slowing. Since provincially regulated railways are not required to publicize similar rationalization plans, little is known of the intentions of these carriers except in situations that occasionally become publicized, such as the halting of the E&N Railway. Even in this case, it is unclear what RailAmerica's intentions are at the present time.

The three-year plans, therefore, are essentially CN's and CPR's plans. The balance of their current plans is shown in Table 9-5.

**TABLE 9-5: PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE**

		(Route-kilometres)							
		BC	Alta.	Sask.	Man.	Ont.	Que.	NB	Total
Discontinuances	CPR	19	269	257	58	13	0	13	628
	CN	0	0	109	0	173	10	0	291
	Total	19	269	366	58	186	10	13	920
Transfers	CPR	0	0	0	0	0	0	0	0
	CN	0	0	0	0	117	0	0	117
	Total	0	0	0	0	117	0	0	117

Note: Totals may not add up due to rounding

Source: Transport Canada

Coincidentally, the same amount of trackage has been proposed for discontinuance in the remainder of the current plan as was discontinued in 2000. The distribution, however, is quite different. About 77 per cent of planned discontinuances are slated to occur in the four western provinces — 40 per cent of this amount is planned for Saskatchewan alone. Because CPR has ceased to indicate trackage that it plans to transfer to other carriers, the amount of trackage proposed for transfer over the next three years has dropped off considerably compared with last year.<sup>4</sup> Despite the lack of publicized intentions, it is likely that CPR will continue to offer trackage for transfer to other carriers in coming years.

## ROAD TRANSPORTATION INFRASTRUCTURE

### CANADA'S ROAD NETWORK

Canada's road network spans more than 1.4 million kilometres (two-lane equivalent basis). The vast majority of this (1.2 million kilometres, or 85 per cent) is classified as urban streets or local rural roads, and includes all roads under private control. Five provinces (Ontario, Quebec, Saskatchewan, Alberta, and British Columbia) account for 80 per cent of the local roads and streets.

3 The Lakeland & Waterways Railway was originally owned by CN and was transferred to RailLink. RailAmerica acquired RailLink (among other shortlines, notably RailTex) a few years ago.

4 Between them, CN and CPR proposed about 940 kilometres of track for transfer in the 2001 three-year plan. CPR accounted for about 85 per cent of this amount. Assuming that CPR will still seek to transfer the trackage it previously identified, it is likely it will transfer about 800 kilometres of track in the coming years.

The rest of the road network, about 215,000 kilometres, consists of primary and secondary highways under provincial/territorial jurisdiction or major urban arterial and collector roads under municipal/local control. Three main components make up the highway/arterial network:

- **Freeways** — Freeways are high-volume, multi-lane, controlled-access highways that link Canada's largest metropolitan areas. Of the 16,000 kilometres of freeways in Canada, more than 60 per cent are found in Ontario and Quebec. The freeway network makes up a little more than one per cent of Canada's total road network. The 400-series highways in Ontario and Highway 2 in Alberta are examples of freeways.
- **Primary highways** — Primary highways include 85,000 kilometres of roads under provincial/territorial government control that link the major urban areas/activity centres in each jurisdiction and provide access to the United States. The majority are concentrated in Manitoba, Saskatchewan and Alberta. About six per cent of the network is classified as primary provincial highways. Highway 17 in Ontario and any of the two-digit numbered highways in the Prairies are examples of primary highways.
- **Secondary roads** — Secondary roads provide access between smaller towns and activity centres at the county or regional level. This network exceeds 100,000 kilometres, with 70,000 kilometres under provincial control and the rest under municipal/local control. Eight per cent of the network is classified as secondary highway/arterial roads, with the largest share (30 per cent) found in Ontario. Quebec, Ontario and the three Prairie Provinces account for nearly 80 per cent of

### NEW FEDERAL GOVERNMENT FUNDING INITIATIVES

The federal budget of February 2000 allocated \$2.65 billion for an overall infrastructure program, including \$2.05 billion for municipal infrastructure and \$600 million for strategic highway infrastructure. Transport Canada will be responsible for the administration of the new Strategic Highway Infrastructure Program (SHIP). The SHIP provides \$500 million for strategic highway improvements and \$100 million for national system integration initiatives, including \$65 million for improvements at or near land border crossings and the deployment of Intelligent Transportation Systems (ITS) across Canada (\$30 million).

Budget 2001 announced funds for two new initiatives that will provide additional sources of funding for highway infrastructure. The Government has committed \$2 billion for the new Canada Strategic Infrastructure Fund (CSIF), which will provide contributions to eligible recipients for the carrying out of large-scale strategic infrastructure projects. "Strategic infrastructure" means any of the following fixed capital assets that are used or operated for the benefit of the public: highway or rail infrastructure; local transportation infrastructure; tourism or urban development infrastructure; sewage treatment infrastructure; water infrastructure; or other infrastructure prescribed by regulation. Budget 2001 also provides \$600 million for a new border infrastructure program, under which projects could include: new or improved highway access for border crossings; processing centres for commercial vehicles to speed up clearance times; and "soft infrastructure" such as intelligent transportation systems.

the secondary highway network. Yonge Street in Toronto or any of the 200 or 300 series highways in Quebec are examples of secondary roads.

Table 9-6 shows the length of roads in Canada.

TABLE 9-6: LENGTH OF ROADS IN CANADA, 2001

	----- Two-lane equivalent kilometres ('000s) -----						----- Percentage distribution -----					
	-- Secondary roads --					Total	-- Secondary roads --					Total
	Freeway	Primary Highway	Provincial Highway	Other Arterial Road	Local Street/Rural Road		Freeway	Primary Highway	Provincial Highway	Other Arterial Road	Local Street/Rural Road	
Newfoundland	0.2	1.5	2.0	3.3	20.1	27.1	1.3	1.7	2.9	7.6	1.7	1.9
Prince Edward Island	-	1.3	2.2	0.0	2.9	6.4	-	1.6	3.2	0.0	0.2	0.5
Nova Scotia	1.6	2.8	3.1	0.2	40.9	48.7	9.6	3.3	4.5	0.4	3.4	3.4
New Brunswick	1.3	1.6	5.9	0.3	67.5	76.6	7.7	1.8	8.5	0.7	5.6	5.4
Quebec	4.9	10.8	8.9	5.2	197.6	227.5	29.7	12.7	12.8	12.1	16.4	16.0
Ontario	5.5	10.3	5.2	28.8	179.9	229.8	33.3	12.1	7.4	66.3	14.9	16.2
Manitoba	0.2	8.1	10.2	0.5	86.1	105.3	1.2	9.6	14.7	1.2	7.1	7.4
Saskatchewan	0.1	20.4	12.0	0.5	216.9	250.0	0.8	24.0	17.2	1.2	18.0	17.6
Alberta	1.4	15.0	15.4	1.9	187.8	221.5	8.3	17.6	22.0	4.5	15.6	15.6
British Columbia	1.3	9.8	2.5	2.6	184.8	201.0	8.0	11.5	3.6	5.9	15.3	14.2
Yukon Territory	-	2.6	0.9	0.0	12.5	16.1	-	3.1	1.3	0.1	1.0	1.1
Northwest Territories	-	0.8	1.3	0.0	8.0	10.1	-	0.9	1.8	0.0	0.7	0.7
Nunavut	-	-	-	-	0.1	0.1	-	-	-	0.0	0.0	0.0
<b>Total</b>	<b>16.6</b>	<b>85.1</b>	<b>69.7</b>	<b>43.4</b>	<b>1,205.3</b>	<b>1,420.1</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Share	1.2	6.0	4.9	3.1	84.9	100.0						

Source: DMTI Spatial, Canmap Streetfiles, version 5.0



## TRAFFIC BETWEEN CANADA AND THE UNITED STATES

For the first time since 1991, the number of trucks crossing between Canada and the United States fell compared with the previous year, from 13.6 million vehicles in 2000 to 13 million vehicles in 2001, a four per cent drop. This ends nine consecutive years of annual increases in transborder truck traffic. From 1991 to 2000, truck traffic nearly doubled, rising from 7.1 million crossings to 13.6 million in 2000 (see Figure 9-1). This decline was due largely to the slowdown in economic activity in both Canada and the United States in 2001. Trucking activity is a derived demand, and any reduction

in the economic activity of shippers will have a negative impact on the demand for trucking services. The number of crossborder trucking movements thus acts as a shorthand indicator of general economic conditions.

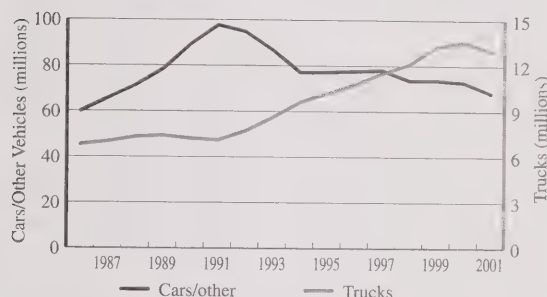
While truck movements fell for the first time in a decade, car and other vehicle traffic continued their steady decline in 2001, falling a further six per cent from 2000 to only 68 million vehicle crossings. Since 1991, non-truck crossborder activity has fallen 30 per cent from the all-time high of 97.7 million crossings in 1991.

### Annual Vehicle Traffic at Major Border Crossings, 1999-2001

#### Trucks

Crossborder traffic is heavily concentrated among a small number of sites. As Table 9-7 shows, almost 90 per cent of total truck movements passed through the 20 busiest truck sites in 2001. Of these 20 crossings, the four busiest and eight in total were in Ontario. The top four truck crossings (Ambassador Bridge in Windsor, Peace Bridge in Fort Erie, Blue Water Bridge in Sarnia, and the Queenston-Lewiston Bridge in Niagara Falls) handled 7.1 million trucks in 2001, or 54 per cent of the total number of crossings. British Columbia and Quebec had a total of seven crossings in the top 20, with their largest crossings, Pacific Highway/Douglas and Lacolle, rounding out the top six. New Brunswick had two crossings in the top 20 and the Prairie Provinces had one crossing each.

FIGURE 9-1: ANNUAL TWO-WAY VEHICLE COUNTS BETWEEN CANADA AND THE UNITED STATES, 1986-2001



Source: Statistics Canada, International Travel section

TABLE 9-7: TWENTY LARGEST BORDER CROSSINGS FOR TRUCKS, 1999 - 2001

Annual Two-way Traffic Volumes

Crossing	Province	Millions			2001 Rank	Per cent		
		1999	2000	2001		1999	2000	2001
Ambassador Bridge - Windsor	Ontario	3.43	3.49	3.24	1	25.9	25.7	24.9
Blue Water Bridge - Sarnia	Ontario	1.41	1.48	1.47	2	10.7	10.9	11.3
Peace Bridge - Fort Erie	Ontario	1.50	1.45	1.35	3	11.4	10.7	10.4
Queenston - Lewiston Bridge	Ontario	0.96	1.04	1.00	4	7.3	7.7	7.7
Lacolle	Quebec	0.85	0.79	0.79	5	6.4	5.9	6.1
Pacific Highway/Douglas	British Columbia	0.86	0.87	0.79	6	6.5	6.4	6.0
Lansdowne	Ontario	0.51	0.53	0.50	7	3.8	3.9	3.9
Emerson	Manitoba	0.34	0.36	0.37	8	2.6	2.7	2.8
Phillipsburg	Quebec	0.29	0.31	0.30	9	2.2	2.3	2.3
Coutts	Alberta	0.23	0.26	0.29	10	1.8	1.9	2.2
Rock Island	Quebec	0.24	0.27	0.26	11	1.8	2.0	2.0
Beauce	Quebec	0.13	0.19	0.19	12	1.0	1.4	1.5
Detroit-Windsor Tunnel	Ontario	0.21	0.18	0.17	13	1.5	1.3	1.3
Woodstock	New Brunswick	0.14	0.17	0.16	14	1.1	1.3	1.2
Aldergrove	British Columbia	0.12	0.14	0.16	15	0.9	1.0	1.2
Huntingdon	British Columbia	0.13	0.13	0.14	16	1.0	0.9	1.1
Sault Ste. Marie	Ontario	0.14	0.13	0.13	17	1.1	1.0	1.0
North Portal	Saskatchewan	0.13	0.13	0.13	18	1.0	1.0	1.0
Pigeon River	Ontario	0.08	0.09	0.10	19	0.6	0.7	0.7
Milltown	New Brunswick	0.08	0.10	0.08	20	0.6	0.8	0.6
<b>Top-20 (ranked by trucks)</b>		<b>11.80</b>	<b>12.12</b>	<b>11.62</b>		<b>89.0</b>	<b>89.3</b>	<b>89.2</b>
<b>Total</b>		<b>13.25</b>	<b>13.58</b>	<b>13.03</b>				

Note: Two-way traffic volume was estimated by doubling one-way flows into Canada.

Source: International Travel section, Statistics Canada and other unpublished statistics



As the aggregate numbers show, 15 of the 20 largest truck crossings registered fewer truck movements in 2001 than in 2000. Together, the 20 largest border crossings showed an overall decline of 4.2 per cent from 2000 to 2001.

### Cars and other vehicles

The distribution of non-truck traffic at the border (i.e. cars, light trucks, vans and buses) was similar to truck distributions except that more non-truck traffic was concentrated at crossings close to populated urban areas. As Table 9-8 shows, the Windsor–Detroit area was again the busiest region, with over 15 million car/other vehicle trips in 2001. The Ambassador Bridge was the single largest post, handling nearly 12 per cent of total car activity, followed closely by the Detroit–Windsor Tunnel, with 11.1 per cent. The Niagara-area was the next busiest region, with over 14 million vehicles crossing at its principal points. Altogether, the major southern Ontario crossings (including the Blue Water Bridge at Sarnia) accounted for nearly one half of the non-truck transborder activity in 2001. Overall, 10 of the 20 busiest crossings were found in Ontario, representing about 58 per cent of total activity. The busiest border crossing outside of Ontario was the Pacific Highway/Douglas, south of Vancouver. It was fourth largest overall and handled over eight per cent of total non-truck transborder activity in 2001. British Columbia, with three additional crossings in the top 20, all located close to Vancouver, accounted for nearly 14 per cent of activity. Quebec had three primary

crossings, representing about six per cent of the total. Three New Brunswick crossings made up the balance of the top 20 list, with almost 5.5 per cent of the total car/other vehicle activity. As with truck activity, all but three border crossings in the top 20 recorded reductions in car/other vehicle traffic compared with 2000.

## MARINE TRANSPORTATION INFRASTRUCTURE

### PORTS AND HARBOURS

Canada's ports and harbours play a crucial role in linking economic activities to markets that otherwise would not be accessible. Canada's major ports are vital gateways in the national transportation system. Their links with the railway and road systems are essential for transporting both exported and imported goods, especially goods that are going to or coming from other continents. The major ports are also important in sustaining employment; generating local economic activities; providing local people with access to essential resupply services; and assisting with activities related to business or pleasure travel.

Ports are supported by infrastructure, such as marine terminals, that is directly related to the type of traffic they handle (e.g. facilities and organizations related to the

TABLE 9-8: TWENTY LARGEST BORDER CROSSINGS, CARS/OTHER VEHICLES, 1999 – 2001

Crossing	Province	Annual Two-way Traffic Volumes			2001 Rank	Per cent		
		1999	2000	2001		1999	2000	2001
Ambassador Bridge – Windsor	Ontario	9.0	8.8	7.9	1	12.2	12.1	11.6
Detroit-Windsor Tunnel	Ontario	9.4	8.4	7.6	2	12.8	11.6	11.1
Peace Bridge – Fort Erie	Ontario	6.5	6.8	6.7	3	8.8	9.3	9.8
Pacific Highway/Douglas	British Columbia	6.1	6.0	5.5	4	8.2	8.3	8.1
Niagara – Rainbow Bridge	Ontario	4.1	3.7	4.2	5	5.6	5.1	6.1
Blue Water Bridge – Sarnia	Ontario	4.1	4.4	4.1	6	5.5	6.0	6.1
Niagara – Queenston-Lewiston Bridge	Ontario	3.4	3.5	3.3	7	4.6	4.8	4.8
Sault Ste. Marie	Ontario	2.5	2.4	2.1	8	3.4	3.3	3.0
Cornwall	Ontario	2.0	2.1	2.0	9	2.8	2.9	3.0
Lacolle	Quebec	2.0	2.0	1.9	10	2.6	2.7	2.8
St. Stephen	New Brunswick	1.9	1.8	1.6	11	2.5	2.4	2.4
Boundary Bay	British Columbia	1.6	1.7	1.5	12	2.2	2.3	2.2
Edmundston	New Brunswick	1.5	1.5	1.3	13	2.0	2.0	2.0
Huntingdon	British Columbia	1.5	1.5	1.3	14	2.0	2.0	1.9
Lansdowne	Ontario	1.2	1.2	1.2	15	1.7	1.7	1.7
Rock Island	Quebec	1.2	1.2	1.2	16	1.6	1.7	1.7
Aldergrove	British Columbia	1.2	1.2	1.2	17	1.7	1.7	1.7
Phillipsburg	Quebec	0.8	0.9	0.9	18	1.2	1.2	1.3
Fort Frances	Ontario	0.9	0.9	0.8	19	1.2	1.2	1.1
Milltown	New Brunswick	0.7	0.7	0.8	20	1.0	1.0	1.1
<b>Top-20</b>		<b>61.4</b>	<b>60.7</b>	<b>56.9</b>		<b>83.4</b>	<b>83.4</b>	<b>83.5</b>
<b>Total</b>		<b>73.7</b>	<b>72.8</b>	<b>68.1</b>				

Note: Two-way traffic volume was estimated by doubling one-way flows into Canada.

Source: International Travel section, Statistics Canada and other unpublished statistics

loading and unloading of vessels berthed at the wharf). Port Authorities operate some of these marine terminals but, often they are owned and operated by independent companies renting space from the port.

## CANADA'S PORT AND HARBOURS SYSTEM

In December 1995, with the announcement of the National Marine Policy, Canada's ports system began a process of reorganization. The federal government moved out of the direct operation of ports, giving local users more say in port services. The National Marine Policy was implemented under the *Canada Marine Act*, which received Royal Assent on June 11, 1998. The policy calls for three categories of ports: (1) Canada Port Authorities, (2) regional/local ports and (3) remote ports.

The *Canada Marine Act* has created a National Ports System made up of independently managed Canada Port Authorities (CPAs). The authorities are considered self-sufficient ports that are critical to domestic and international trade. They include former Ports Canada local port corporations, most of the former Canada Ports Corporation's major divisional ports, and most former harbour commissions. On May 1, 2001, the Hamilton Port Authority was established, bringing the total number of CPAs to 19 designated ports. In addition, the Minister has approved the initiation of the CPA implementation process for the Oshawa Harbour Commission. The Port of Oshawa is expected to complete the letters patent process and receive Canada Port Authority status in 2002.

Further details about this reorganization can be found in previous annual reports, accessible on the Transport Canada Web site at [www.tc.gc.ca/pol/en/t-facts3/Transportation\\_Annual\\_Report.htm](http://www.tc.gc.ca/pol/en/t-facts3/Transportation_Annual_Report.htm). A status report on the divestiture of ports by the federal government can be found at [www.tc.gc.ca/programs/ports/menu.htm](http://www.tc.gc.ca/programs/ports/menu.htm).

A review of the *Canada Marine Act* is mandated under section 144 of the Act to be completed by the Minister during the fifth year after the Act was granted assent. As a result, a review of the Act must be completed by June 2003, and a report of the findings must be presented to each House of Parliament. The review of the CMA will commence in 2002.

Transport Canada's operational role in Canada's National Ports System includes enforcing regulations for public port and public port facility use, monitoring port operations, and collecting user fees. Port services, such as cargo handling, are supplied by the private sector.

Transport Canada began commercializing its public ports in April 1996 within the appropriate statutory

framework. Under the National Marine Policy, regional/local ports are being transferred to other federal departments, provincial governments, municipal authorities, community organizations or private interests over a six-year period scheduled to end on March 31, 2002. Public ports are also being deproclaimed once Transport Canada has relinquished the last of its ownership interests, including the harbour beds, as appropriate, to a new owner. Once a public port has been deproclaimed, Transport Canada no longer has the authority to regulate activities in these waters. Therefore, federally appointed harbour masters, whose prime responsibilities are to administer public port regulations, will be removed once the ports are deproclaimed.

By the end of December 2001, 420 of the 549 public ports and port facilities that were under Transport Canada's control and administration before the National Marine Policy came into force had been transferred, deproclaimed or demolished, or had Transport Canada's interests terminated. As of December 31, 2001, 129 regional/local and remote ports and port facilities remained under Transport Canada control, 19 sites where facilities have been divested, remain to be deproclaimed because the harbour bed has not yet been divested.

Table 9-9 summarizes the classification of major ports and harbours as of December 31, 2001.

**TABLE 9-9: CLASSIFICATION OF MAJOR PORTS AND HARBOURS**

(Status as of December 31, 2001)

	Federal	Provincial	Municipal	Private	Total
<b>Federal Agency Ports</b>					
Canada Port Authorities	19	N/A	N/A	N/A	19
Harbour Commissions	1	N/A	N/A	N/A	1
<b>Ports Operated by Transport Canada</b>					
Regional/Local Ports	95	N/A	N/A	N/A	95
Remote Ports	34	N/A	N/A	N/A	34
<b>Ports Transferred<sup>1</sup> from Transport Canada</b>	64	39	85	N/A	188
<b>Status of other former Transport Canada Ports</b>					
Demolished	3	N/A	N/A	N/A	3
Interests Terminated	18	N/A	N/A	N/A	18
Deproclaimed	211	N/A	N/A	N/A	211
<b>Department of Fisheries and Oceans (DFO) Harbours<sup>2</sup></b>					
Fishing Harbours					
Harbour Authorities		N/A	N/A	N/A	635
Small Craft Harbours		N/A	N/A	N/A	433
Recreational Harbours					
Operated by DFO		N/A	N/A	N/A	178
Transferred		84	397	28	615
<b>Other Ports in Operations</b>	N/A	4	2	33	39

Note: N/A = Not Applicable.

<sup>1</sup> Includes 21 sites where facilities have been transferred, but harbour bed has not yet been deproclaimed and 64 sites that were transferred to the Department of Fisheries and Oceans.

<sup>2</sup> Excludes 64 ports transferred from Transport Canada.

<sup>3</sup> Total includes 106 other divested recreational harbours.

Source: Port Corporations and Port Property, Transport Canada

Table 9-10 summarizes the provincial distribution of the ports administered by Transport Canada from 1995 to 2001.

**TABLE 9-10: NUMBER OF SITES UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA BY PROVINCE, 1995 – 2001**

(Status as of December 31, 2001)

Province	1995 <sup>1</sup>	1996	1997	1998	1999	2000	2001
Newfoundland	58	40	20	19	18	18	18
New Brunswick	45	9	7	6	3	3	3
Nova Scotia	128	35	35	31	18	12	5
Prince Edward Island	31	4	4	4	4	4	4
Quebec	73	48	46	46	45	36	36
Ontario	54	37	30	25	20	19	16
Manitoba	2	2	2	2	2	2	2
Saskatchewan	4	4	4	4	4	4	4
Alberta	3	1	1	1	1	1	1
British Columbia	105	92	89	89	78	68	40
Northwest Territories	46	0	0	0	0	0	0
<b>Total</b>	<b>549</b>	<b>272</b>	<b>238</b>	<b>227</b>	<b>193</b>	<b>167</b>	<b>129</b>

1 Last year before the National Marine Policy.

Source: Port Corporations and Port Property, Transport Canada

As of December 31, 2001, 188 public ports and public port facilities have been transferred, 39 to provincial governments, 64 to other federal departments, and 85 to local interests. Of the 188 sites, 19 did not yet have their public port status deproclaimed. In addition 21 sites have either been demolished or have had Transport Canada's interest terminated (through lease or licence terminations).

On the whole, 262 public ports have been deproclaimed. Archival research identified an additional 26 harbours (in addition to the original 549 port sites identified in the National Marine Policy), 25 of which were adjacent to port facilities already transferred.

The federal government will continue to maintain remote ports that serve the basic transportation needs of isolated communities, unless local interests express a willingness to assume ownership of them. While no remote ports were divested in 2001, 27 remote ports have been divested since 1996. As a result, Transport Canada continues to administer 34 remote ports nation-wide

(ten in Quebec, three in Ontario, one in Manitoba and twenty in British Columbia).

Table 9-11 shows the divestiture status of regional/local and remote ports as well as the number of ports remaining, on a regional basis.

At the end of 2001, there were 164 other ports in Canada, including 82 private, 41 provincial and 41 municipal ports. These include sites such as Port Cartier, Quebec, and Nanticoke, Ontario, used to ship large volumes of cargo; and Quyon, Quebec, used for an interprovincial ferry service on the Ottawa River.

### Financial Performance

Audited financial statements for 2001 were not available for this report. Consequently, results for 2000 are provided for the 18 ports designated as Canada Port Authorities (CPAs) as of December 31, 2000.

Table 9-12 shows revenues, expenses and some key ratios for Canada Port Authorities in 2000. In that year, the CPAs posted total revenues of \$256.2 million, with a net income of \$34.2 million and an operating cash flow of \$92.4 million. Among the 18 designated CPAs, Vancouver and Montreal accounted for approximately 58 per cent of total revenues generated. Four CPAs accounted for 64 per cent of total cargo, by volume: Vancouver handled 34 per cent, while Montreal, Saint John and Sept-Îles each handled ten per cent.

The overall operating ratio for the Canada Port Authorities was approximately 84 per cent in 2000, with the individual ratios ranging from 60 to 136 per cent. The return on assets was three per cent in 2000. Saguenay had the highest return on assets (21.4 per cent), followed by Trois-Rivières (16.7 per cent) and Quebec City (6.8 per cent).

Table 9-13 shows revenues, expenses and net incomes of all the Harbour Commissions and Ports Canada ports from 1996 to 2000, while Table 9-14 compares revenues, expenses and net incomes of all

**TABLE 9-11: DIVESTITURE STATUS OF TRANSPORT CANADA REGIONAL/LOCAL AND REMOTE PORTS**

(Status as of December 31, 2001)

Region	Transferred <sup>1</sup>	Deproclaimed <sup>2</sup>	Demolished/ Closed	Transport Canada Interests Terminated	Remaining	Total
Pacific	47	10	2	6	40	105
Prairie/Northern	47	1	-	-	7	55
Ontario	17	17	-	4	16	54
Quebec	13	23	1	-	36	73
Atlantic Provinces	64	160	-	8	30	262
<b>Total</b>	<b>188</b>	<b>211</b>	<b>3</b>	<b>18</b>	<b>129</b>	<b>549</b>

1 Numbers include remote ports and sites where harbour beds have not yet been divested.

2 Does not include deproclamation of 26 harbours found during subsequent archival research, nor deproclamation of 24 public harbours located adjacent to port facilities that had already been divested.

Source: Port Corporations and Port Property, Transport Canada



TABLE 9-12: CANADA PORT AUTHORITIES FINANCIAL PROFILES, 2000

(Millions of dollars)

<i>Financial Information</i>	<i>Vancouver</i>	<i>Montreal</i>	<i>Halifax</i>	<i>Quebec City</i>	<i>Saint John</i>	<i>St. John's</i>	<i>Prince Rupert</i>	<i>Port Alberni</i>	<i>Fraser River</i>
Operating Revenues	86,443	61,988	18,054	11,107	10,404	3,504	6,409	2,616	14,469
Operating Expenses <sup>2</sup>	56,034	61,966	12,719	10,768	9,071	3,033	6,394	3,565	13,107
Operating Income	30,409	0,022	5,334	0,338	1,333	0,471	0,015	(0,949)	1,361
Ratio: Expenses/Revenues (per cent)	64.8	100.0	70.5	97.0	87.2	86.6	99.8	136.3	90.6
Net Income	24,413	6,685	4,981	3,201	2,296	0,756	(14,685)	(0,510)	0,857
Net Fixed Assets	426,052	162,520	85,262	47,412	58,794	13,099	78,588	9,008	94,902
Ratio: Net Income/Net Fixed Assets (per cent)	5.7	4.1	5.8	6.8	3.9	5.8	(18.7)	(5.7)	0.9
Investment Income	2,229	6,663	0,137	0,947	0,963	0,335	0,501	0,426	0,835
Funds from Operations	65,397	(9,159)	9,187	1,143	4,447	1,897	1,754	0,062	2,453
Funds used in Investing Activities	49,244	(12,276)	6,576	16,416	6,924	0,713	(0,259)	1,179	(0,554)
Acquisition of Fixed Assets, Net	49,238	13,348	6,576	5,797	2,996	0,713	0,671	1,179	3,973
<b>Total Assets</b>	<b>485,501</b>	<b>276,566</b>	<b>94,776</b>	<b>91,255</b>	<b>75,089</b>	<b>20,620</b>	<b>91,691</b>	<b>16,337</b>	<b>116,075</b>
Equity	404,913	247,649	81,207	27,819	71,074	19,563	90,281	15,790	88,155
Contributed Capital	150,259	237,263	50,857	4,506	61,659	18,422	84,612	3,191	79,602
Retained Earnings <sup>3</sup>	254,654	10,386	30,351	23,313	9,415	1,141	5,669	12,599	8,553

<i>Financial Information</i>	<i>Nanaimo</i>	<i>North Fraser</i>	<i>Thunder Bay</i>	<i>Toronto</i>	<i>Windsor</i>	<i>Saguenay</i>	<i>Sept-Îles</i>	<i>Trois-Rivières</i>	<i>Belledune<sup>4</sup></i>	<i>Total All CPAs<sup>5</sup></i>
Operating Revenues	5,766	2,657	2,826	13,304	1,148	1,469	7,997	3,476	2,568	256,204
Operating Expenses <sup>2</sup>	6,076	2,748	2,617	15,635	1,305	1,270	4,842	2,505	1,813	215,469
Operating Income	(0,310)	(0,091)	0,210	(2,331)	(0,157)	0,200	3,155	0,971	0,755	40,735
Ratio: Expenses/Revenues (per cent)	105.4	103.4	92.6	117.5	113.7	86.4	60.5	72.1	70.6	84.1
Net Income	0,287	0,083	0,938	(0,554)	0,155	0,859	2,127	2,207	0,058	34,154
Net Fixed Assets	22,824	2,087	16,138	42,691	3,880	4,018	35,350	13,185	41,817	1,157,626
Ratio: Net Income/Net Fixed Assets (per cent)	1.3	4.0	5.8	(1.3)	4.0	21.4	6.0	16.7	0.1	3.0
Investment Income	0,586	0,083	0,728	1,777	0,313	0,734	0,299	1,235	0,218	19,008
Funds from Operations	3,336	0,661	1,666	2,365	0,190	0,817	2,424	2,621	1,104	92,365
Funds used in Investing Activities	1,709	0,569	1,687	1,382	(0,026)	0,785	1,148	2,777	26,220	104,215
Acquisition of Fixed Assets, Net	1,417	0,569	0,090	1,176	0,170	(0,092)	3,568	1,939	42,437	135,764
<b>Total assets</b>	<b>35,894</b>	<b>11,434</b>	<b>29,918</b>	<b>74,048</b>	<b>9,691</b>	<b>15,765</b>	<b>41,550</b>	<b>31,632</b>	<b>49,132</b>	<b>1,566,975</b>
Equity	33,533	10,396	29,338	62,110	9,076	15,453	14,402	30,738	-	1,251,495
Contributed Capital	24,991	6,638	27,712	0,000	8,618	13,999	11,466	(6,740)	18,302	795,357
Retained Earnings <sup>3</sup>	8,542	3,757	1,626	62,110	0,458	1,454	2,936	37,478	0,058	474,499

1 Fraser River figures represent the 12 month period for the year ending April 30, 2001. All other figures represent 2000 calendar year.

2 Includes Gross Revenue Charge and Dividend to Canada.

3 May include previous years as reported in the financial statements.

4 Figures include port's predecessor, and is therefore a full year.

5 Due to rounding, columns may not add to totals shown.

Source: Port Financial Statements; Port Corporations and Port Property, Transport Canada

ports that have CPA status as of December 31, 1999, and 2000, respectively.

At first glance, the figures in Table 9-13 indicate that the total operating revenues jumped from \$238 million in 1999 to more than \$256 million in 2000, while expenditures rose by \$6.3 million, a situation partly attributable to Belledune gaining CPA status in 2000. In comparing the same ports in 1999 to 2000, Table 9-14 shows that revenues increased from approximately \$244 million to \$256 million, or five per cent. Eleven of the 18 CPAs reported an increase in revenues ranging from \$0.02 million to \$9.62 million, while eight of them reported decreases in expenditures ranging from \$0.05 million to \$1.8 million.

TABLE 9-13: FINANCIAL RESULTS OF MAJOR PORTS, 1996 – 2000

(Millions of dollars)

	1996 <sup>1</sup>	1997 <sup>1</sup>	1998 <sup>1</sup>	1999 <sup>2</sup>	2000 <sup>3</sup>
Revenues	285.9	296.8	287.2	238.3	256.2
Expenses	226.3	235.6	227.0	209.2	215.5
Operating Income	59.6	61.2	60.2	29.1	40.7
Ratio (per cent)	79	79	79	88	84
<b>Net Income</b>	<b>36.2</b>	<b>44.5</b>	<b>28.1</b>	<b>35.7</b>	<b>34.2</b>

1 Includes all Harbour Commissions and Ports Canada Ports

2 Includes those ports with CPA status as of December 31, 1999. 1999 figures have been updated to reflect changes in accounting policies as was reported in the 2000 audited financial statements.

3 Includes those ports with CPA status as of December 31, 2000

Source: Port Financial Statements; Port Corporations and Port Property, Transport Canada

**TABLE 9-14: CANADA PORT AUTHORITIES  
FINANCIAL COMPARISON, 1999 AND 2000<sup>1</sup>**

(Millions of dollars)

	Revenues		Expenses		Net Income	
	1999 <sup>2</sup>	2000	1999 <sup>2</sup>	2000	1999 <sup>2</sup>	2000
<i>CPA Ports</i>						
Vancouver	76.82	86.44	54.76	56.03	17.87	24.41
Montreal	58.87	61.99	57.66	61.97	4.46	6.69
Halifax	15.80	18.05	12.82	12.72	3.45	4.98
Quebec City	11.71	11.11	11.91	10.77	2.56	3.20
Saint John	10.41	10.40	9.52	9.07	1.64	2.30
St. John's	3.21	3.50	2.80	3.03	1.00	0.76
Prince Rupert	6.38	6.41	6.01	6.39	1.22	(14.68)
Port Alberni	3.10	2.62	3.17	3.57	0.34	(0.51)
Fraser River	14.43	14.47	13.54	13.11	0.81	0.86
Nanaimo	6.14	5.77	6.27	6.08	0.28	0.29
North Fraser	2.64	2.66	2.68	2.75	0.14	0.08
Thunder Bay	3.05	2.83	2.66	2.62	1.05	0.94
Toronto	12.24	13.30	17.41	15.64	(3.36)	(0.55)
Windsor	1.15	1.15	0.95	1.31	0.37	0.16
Saguenay	1.19	1.47	0.96	1.27	0.85	0.86
Sept-Îles	7.95	8.00	4.58	4.84	1.23	2.13
Trois-Rivières	3.23	3.48	1.52	2.50	1.81	2.21
Belledune	5.50	2.57	2.30	1.81	0.15	0.06
<b>Total CPA Ports</b>	<b>243.84</b>	<b>256.20</b>	<b>211.54</b>	<b>215.47</b>	<b>35.84</b>	<b>34.15</b>

Note: Due to rounding, columns may not add to totals shown.

1 1999 data includes the financial results of the port's predecessor in that year, and is therefore, a full year.

2 Some 1999 figures have been restated to reflect changes in accounting policies as was reported in the 2000 audited financial statements.

Source: Port Financial Statements; Port Corporations and Port Property; Transport Canada

This results in a total decrease of \$4.6 million. In terms of revenues, Vancouver and Montreal reported the highest increases, at \$9.6 million (12.5 per cent) and \$3.12 million (5.3 per cent), respectively. Saguenay and Halifax reported the largest per cent increases, at 23 per cent (\$0.28 million) and 14 per cent (\$2.2 million), respectively. Increases in expenses at ten ports ranged from \$0.07 million to \$4.3 million, for a combined increase of \$8.6 million. The net effect was a total increase in expenditures in 2000 of \$4 million over those in 1999.

For major ports with CPA status as of December 31, 2000, net income decreased by \$1.7 million from 1999. In contrast, 11 of the 18 ports reported increases ranging from \$0.01 to \$6.5 million, for a combined increase of \$15.5 million. The seven ports that reported a decrease in net income had a combined loss of \$17.5 million, with ranges from \$0.09 million to \$15.9 million. Prince Rupert's net income of -\$14.7 million can be attributed to a \$15.2 million write-down on certain capital assets whose net recoverable value was less than the recorded carrying value.

In 1999, tonnage for the CPA ports decreased to 204.9 million tonnes from 207.3 million tonnes the year before. Based on this tonnage, the revenue per tonne increased from \$1.13 in 1998 to \$1.17 in 1999, while expenses per tonne increased from \$0.94 to \$1.03.

## Transport Canada Ports

Ten per cent of the ports remaining under Transport Canada's control generated 73 per cent of the total revenues in fiscal year 2000/01. As Table 9-15 shows, numerous factors have caused revenues to fluctuate year over year, including tariff increases implemented in 1996 and 2000; a reduction in the number of Transport Canada ports as a result of divestiture; and various utilization factors of Transport Canada's ports and port facilities.

For 2000/01, gross revenues at the remaining facilities were \$12.9 million, while expenses were \$22 million. This left an operating income shortfall of \$9.1 million and an operating ratio of 170 per cent. Capital expenditures for 2000/01 were \$10.4 million. An additional \$45.4 million in grants and contributions was expended during this year for costs related to transfers associated with port divestitures.

Since the National Marine Policy came into effect, some unforeseen maintenance expenses and capital expenditures were incurred to maintain safety standards. In some cases, capital projects were carried out in remote sites for which Transport Canada will continue to maintain full responsibility. A few port transfers of substantial value were concluded during this reporting period, accounting for the increase in grants and contributions.

Between 1996 and 2000, revenues per tonne decreased from \$0.28 to \$0.17, or by approximately 64 per cent, while expenses per tonne decreased from \$0.39 per tonne to \$0.30 per tonne. (These tonnage statistics include cargos moved across private facilities within Transport Canada public harbours.)

**TABLE 9-15: FINANCIAL RESULTS FOR TRANSPORT  
CANADA PORTS, 1996/97 – 2000/01**

(Millions of dollars)

	1996/97	1997/98	1998/99	1999/2000	2000/01
Revenue <sup>1</sup>	20.3	20.7	18.6	19.0	12.9
Expenses <sup>2</sup>	28.5	27.4	24.3	26.2	22.0
Operating Income	(8.2)	(6.7)	(5.7)	(7.1)	(9.1)
<b>Capital Expenditures</b>	<b>11.9</b>	<b>1.9</b>	<b>4.1</b>	<b>7.6</b>	<b>10.4</b>
Grants and Contributions <sup>3</sup>	13.1	1.5	1.3	16.6	45.4
<b>Ratio: Expenses/Revenues (per cent)</b>	<b>140.4</b>	<b>132.4</b>	<b>130.7</b>	<b>137.4</b>	<b>170.3</b>

Note: Financial information is based upon accrual accounting principles.

1 Gross revenues.

2 Operating and maintenance expenses including commissions.

3 Transfers related to the devolution of port facilities.

Source: Annual Reports and Transport Canada

## Port Traffic

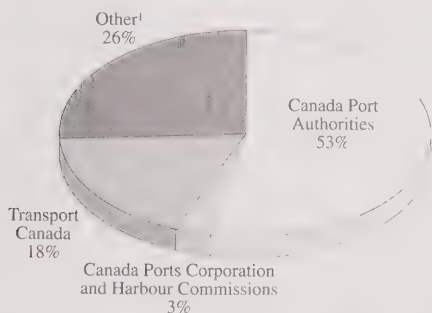
The following data show the actual traffic (cargo handled) at some Canada Port Authorities in 2000:

- Halifax: 13.6 million tonnes
- Montreal: 20 million tonnes
- Prince Rupert: 7.2 million tonnes
- Quebec: 15.7 million tonnes
- Saguenay: 0.414 million tonnes
- Saint John: 19.2 million tonnes
- Sept-Îles: 23.3 million tonnes
- Thunder Bay: 8.8 million tonnes
- Toronto: 1.7 million tonnes
- Vancouver: 75.3 million tonnes
- Windsor: 5.4 million tonnes

Based on preliminary data provided by Statistics Canada (available only up to 2000), Canada's ports handled 404.5 million tonnes of cargo in 2000, an increase of approximately five per cent over 1999.

Figure 9-2 shows traffic shares by port groups in 2000, based on port classification as of December 31, 2000.

FIGURE 9-2: TRAFFIC SHARES BY PORT GROUPS, 2000



1 Includes the Department of Fisheries and Oceans, provincial and municipal governments and private facilities.

Source: Transport Canada

Traffic data presented for 2000 are based upon port classification as of December 31, 2000, while 1999 traffic data have been restated to reflect the change of former Canada Port Corporation (CPC) ports and Harbour Commissions ports to Canada Port Authority status in 2000.

In 2000, Canada Port Authorities handled 53 per cent of all traffic, the largest share. The ports still classified as divisional ports of the Canada Port Corporation or as Harbour Commissions as of December 31, 2000, transported three per cent of the total cargo, while

Transport Canada facilities moved another 18 per cent. The remaining 26 per cent were handled by other facilities, including those managed privately and those managed by or on behalf of the Department of Fisheries and Oceans and provincial and municipal governments.

Canada Port Authorities' traffic in 2000 showed an increase of approximately five per cent over 1999, from 205 million tonnes to 214 million tonnes. This can be partially attributed to Belledune gaining CPA status.

At those declared public ports where Transport Canada has no facilities and cargo is transported across private wharves, cargo shipments totalled 28 million tonnes, or 38 per cent of the total traffic handled by Transport Canada ports. Approximately 105 million tonnes of cargo crossed the "other" ports. In this category, Port Cartier, Quebec, with approximately 19.1 million tonnes, handled the most cargo, followed by Nanticoke, Ontario, which carried 13.7 million tonnes. The remaining 154 ports that reported cargo tonnage to Statistics Canada carried the balance of cargo.

Table 9-16 compares details of tonnage handled in Canada's port system.

TABLE 9-16: TOTAL TONNAGE HANDLED IN CANADA'S PORT SYSTEM, 1999 – 2000

Port System	(Thousands of tonnes)		Per cent Change
	1999 Total <sup>1</sup>	2000 Total <sup>2</sup>	
Canada Port Authorities <sup>2</sup>	204,942	214,192	5
Canada Ports Corporation and Harbour Commissions	14,645	12,697	(13)
Transport Canada <sup>2</sup>	65,547	72,630	11
Other	100,463	105,027	5
<b>Total</b>	<b>385,597</b>	<b>404,546</b>	<b>5</b>

1 1999 numbers restated to reflect change of former CPC Ports and Harbour Commissions to CPA status in 2000.

2 Tonnage statistics include cargo shipped across private facilities

Source: Transport Canada; Statistics Canada, *Shipping in Canada*, Cat. 54-205

## Small Craft Harbours

### Fisheries and Oceans Canada

During 2001, the Small Craft Harbours (SCH) program of Fisheries and Oceans Canada (DFO) continued to make progress in divesting recreational harbours and derelict/low-activity fishing harbours from its inventory. At the end of the exercise, all recreational harbours will have been transferred and the number of fishing harbours under DFO/SCH responsibility could be as low as 750.



## Fishing Harbours

Since the late 1980s, the SCH program has supported the creation of local harbour authorities to take over management of commercial fishing harbour facilities in their communities. Harbour authorities are local non-profit organizations, composed of fishers and other harbour users, to which SCH leases the management of the harbour. The harbour authorities provide services, maintain the facilities, and manage the harbour operations on a day-to-day basis. As of January 3, 2002, harbour authorities managed 635 sites across Canada. This represents close to 85 per cent of the SCH program's target. Fishing harbours not able to generate enough community interest to form and manage a harbour authority will be disposed of or, if necessary, demolished. Such harbours are usually low or no-activity and have a negligible impact on the commercial fishing industry or the community at large. The SCH has fully divested 223 of these to date, with a further 86 in the final stage of divestiture.

Table 9-17 shows the fishing harbours remaining in the SCH portfolio as of January 3, 2002, by region and type of management.

**TABLE 9-17: FISHING HARBOURS BY MANAGEMENT TYPE AND REGION, AS OF JANUARY 3, 2002**

Region	Harbour Authorities	Small Craft Harbours	Total by Region
British Columbia <sup>1</sup> and Yukon <sup>2</sup>	70	79	149
Prairies and Territories <sup>2</sup>	24	30	54
Ontario	3	10	13
Quebec	51	42	93
Maritimes	282	87	369
Newfoundland and Labrador	205	185	390
<b>Total</b>	<b>635</b>	<b>433</b>	<b>1,068</b>

1 Totals include 47 mooring buoy sites in British Columbia.

2 There are no Harbour Authorities in Saskatchewan, the Northwest Territories, Nunavut or the Yukon.

Source: Small Craft Harbours, Fisheries and Oceans Canada

## Recreational Harbours

The SCH program is committed to the divestiture of all recreational harbours in its inventory. Since 1994/95, it has achieved 73 per cent of its target, with

615 recreational harbour sites transferred or in the final stage of divestiture. Recipients are mainly municipalities, local non-profit organizations, First Nations or other federal departments. In Ontario and Quebec, municipalities are the main recipients of SCH federal recreational harbours. The disposal strategy adopted by the SCH complies with the Program Transfer Flexibilities approved by Treasury Board in 1995. Disposals done under these flexibilities (i.e. for \$1.00 consideration) contain conditions that include a requirement to maintain public access for at least five years. Recreational harbours are offered to potential recipients in a preset order of priority, consistent with federal policy. Prior to transfer, environmental assessments of the sites are conducted, and necessary repairs undertaken by the SCH to ensure that facilities are transferred in safe and reasonable conditions. In the absence of a public body interested in acquiring the facilities, they are offered at market value. As a last resort, if there is neither public nor private interest in the facilities, they are demolished. The recreational harbour divestiture program is expected to continue for several more years.

Tables 9-18 to 9-20 summarize, by region, the status of the SCH recreational harbour divestiture program (Table 9-18), recipients of harbours divested (Table 9-19) and type of management of the remaining harbour sites in the SCH inventory (Table 9-20).

**TABLE 9-19: RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, AS OF JANUARY 3, 2002**

	Province <sup>1</sup>	Municipality	Private Sector	Other <sup>2</sup>	Total by Region <sup>3</sup>
British Columbia and Yukon	51	0	0	0	51
Prairies and Territories	8	6	0	0	14
Ontario	17	192	21	30	260
Quebec	2	179	3	26	210
Maritimes	6	19	4	50	79
Newfoundland and Labrador	0	1	0	0	1
<b>Total</b>	<b>84</b>	<b>397</b>	<b>28</b>	<b>106</b>	<b>615</b>

1 Just over half these properties were subject to provincial reversionary interests and were therefore returned by Department of Fisheries and Oceans (DFO) to the province.

2 In the context of the divestiture of recreational harbours, refers to sites that have been transferred to local non-profit organizations, First Nations or other federal departments, as appropriate.

3 Number of harbours transferred, or in the final transfer stage as of January 3, 2002.

Source: Small Craft Harbours, Fisheries and Oceans Canada

**TABLE 9-18: RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96 – 2001/02**

	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	Plans for 2001/02	Remaining to be divested	Total by Region
British Columbia and Yukon	8	1	25	13	7	0	11	0	65
Central and Arctic	8	50	95	71	41	15	17	150	447
Quebec	53	24	93	15	18	6	15	28	252
Maritimes	0	3	10	28	22	15	2	0	80
Newfoundland and Labrador	0	0	0	1	0	0	1	0	2
<b>Total</b>	<b>69</b>	<b>78</b>	<b>223</b>	<b>128</b>	<b>88</b>	<b>36</b>	<b>46</b>	<b>178</b>	<b>846</b>

Note: Includes harbours transferred or in the final transfer stage as of January 3, 2002.

Source: Small Craft Harbours, Fisheries and Oceans Canada

**TABLE 9-20: RECREATIONAL HARBOURS BY MANAGEMENT TYPE, AS OF JANUARY 3, 2002**

	<i>Managed Under Lease</i>	<i>Small Craft Harbours</i>	<i>Other<sup>1</sup></i>	<i>Total by Region<sup>2</sup></i>
British Columbia and Yukon	0	4	10	14
Prairies and Territories	9	20	0	29
Ontario	107	33	4	144
Quebec	4	38	0	42
Maritimes	0	1	0	1
Newfoundland and Labrador	0	1	0	1
<b>Total</b>	<b>120</b>	<b>97</b>	<b>14</b>	<b>231</b>

1 Refers to a variety of management and non-management situations. Some construction works, such as shoreline reinforcement or breakwaters, are largely stable and do not require ongoing management. Some facilities are part of a larger development, (i.e. a marina) and managed as part of that development. In other cases, facilities no longer exist at the site and there is nothing to manage.

2 Remaining recreational harbours in Small Craft Harbours inventory as of January 3, 2002.

Source: Small Craft Harbours, Fisheries and Oceans Canada

## ST. LAWRENCE SEAWAY

### BACKGROUND

A unique inland waterway, the St. Lawrence Seaway serves the industrial heartland of North America. It serves 15 major international ports and about 50 regional ports along the US and Canadian shores.

The Seaway is divided into two main sections. The Montreal–Lake Ontario (MLO) section runs from Montreal to Lake Ontario and contains seven locks over the 300 kilometres of the section, five in Canada and two in the United States. The Welland Canal section runs from Lake Ontario to Lake Erie and contains eight locks over 42 kilometres.

The locks, and the channels that connect them, can accommodate vessels up to 225.5 metres long, 23.8 metres wide and eight metres in draft. Combined, these 15 locks raise vessels to the height of a 60-storey building above sea level. ([www.greatlakes-seaway.com:80/en/home.html](http://www.greatlakes-seaway.com:80/en/home.html)).

### Third Year Under New Management

The year 2001 marked the third year that the St. Lawrence Seaway Management Corporation (SLSMC) managed the Canadian section of the Seaway. The SLSMC is a private-sector, not-for-profit corporation established by Seaway users and other interested parties. After negotiating a management contract with the federal government, pursuant to Part 3 of the *Canada Marine Act*, the SLSMC assumed management of the Canadian portion of the Seaway on October 1, 1998. SLSMC's contract will expire on March 31, 2018.

Under this contract, the SLSMC is responsible for managing, operating and maintaining the Seaway in

### MEASURES INTRODUCED AS A RESULT OF SEPTEMBER 11

As a result of the September 11 terrorist attacks, the St. Lawrence Seaway Management Corporation (SLSMC) and its US counterparts have announced a number of new security measures. Initially, they announced a Risk Assessment protocol, organized in conjunction with the US Coast Guard and the SLSDC. This protocol requires that a special inspection be performed on each foreign-flag vessel entering the system from overseas; it did, however, allow domestic shipping to continue without inspection.

In the weeks that followed, the SLSMC and the St. Lawrence Seaway Development Corporation made further announcements:

- All vessels must provide pre-entry information at least 96 hours before westbound entry into the Seaway system.
- All foreign-flag vessels must provide pre-entry information, including crew lists (name, rank, citizenship, country of birth, etc.).
- All foreign-flag vessels inbound to the Seaway must provide the vessel's last four ports of call.
- All upbound tanker vessels — foreign, Canadian and US flagged — are now required to submit crew lists before each upbound transit into the system.
- All upbound tank vessels must undergo a "Risk Assessment Inspection" either in port, if stopping in Montreal, or in St. Lambert Lock, which is the first lock encountered when westbound. These inspections take approximately 20 minutes.
- Foreign-flag vessels that are determined to be "High Risk" by the US Coast Guard are subject to a more intensive inspection at the lower wall of Snell Lock — the first US-owned lock in the Seaway and the fourth in the system.

accordance with a Management, Operation and Maintenance Agreement. This agreement requires the SLSMC to submit a new five-year business plan for the five years beginning April 1, 2003 to the Minister of Transport. The business plan is to include anticipated revenues and operating costs, and an "Asset Renewal Plan." To generate revenues operate and maintain the Seaway, the SLSMC is authorized to charge tolls and other charges. The agreement also provides for the SLSMC to recover additional funds from the Government of Canada to eliminate operating deficits, when required.

The SLSMC is using new technology to make Seaway navigation safer, more convenient and more efficient. In 1999, it introduced a modern, high-tech traffic control system to manage ship transits throughout the Seaway channels and allow it to pinpoint the location of every vessel in the Seaway. An automatic vessel identification system (AIS) will use traffic information to create a "virtual Seaway" on computer displays at the control centres and aboard ships. Beginning in the 2003 season, AIS will be mandatory for all commercial vessels on the Seaway.

In addition, a new, bi-national Web site was launched early in 2001 and is expected to be fully interactive by early 2002. The Web site will be a source for up-to-the-minute navigation, environmental and regulatory information and provide bill payment services and other e-business functions to Seaway users.

### Traffic in 2001

During the 2001 season, combined traffic on the two sections of the Seaway was 41.6 million tonnes (based on preliminary traffic data). This was down by nearly five million tonnes from 2000 levels. This decline can be mainly attributed to sharp declines in steel industry-related cargoes — with general cargo (primarily steel) down by nearly 40 per cent and iron ore down by about 24 per cent — as mills coped with a glut of steel and a manufacturing sector in recession.

Table 9-21 shows cargo movements on the St. Lawrence Seaway from 1990 to 2001. Table 9-22 shows the distribution of Seaway traffic by commodity from 1993 to 2001.

**TABLE 9-21: ST. LAWRENCE SEAWAY CARGO MOVEMENTS, 1990 – 2001**

	(Thousands of tonnes)	
	<i>Montreal–Lake Ontario Section</i>	<i>Welland Canal Section</i>
1990	36,656	39,398
1991	34,910	36,919
1992	31,360	33,174
1993	31,970	31,815
1994	38,422	39,703
1995	38,684	39,376
1996	38,075	41,145
1997	36,901	40,902
1998	39,246	40,657
1999	36,400	37,422
2000	35,406	36,572
2001 (estimated)	30,276	32,309

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

### Traffic in 2000

The 2000 navigation season lasted 275 days — one of the longest in Seaway history. The Seaway opened to traffic on March 27, 2000, and closed on December 26, 2000. Despite low water levels in the upper Great Lakes (particularly Lake Huron and Lake Michigan), the Seaway was able to maintain its full draft for virtually the entire navigation season. (Numbers for the 2001 season were not available.)

For most of the 2000 season, traffic levels were higher than in 1999. However, a downturn in the last three months of 2000 resulted in an annual combined tonnage of 46.6 million tonnes — a 2.6 per cent drop from 1999.

**TABLE 9-22: ST. LAWRENCE SEAWAY TRAFFIC BY COMMODITY, 1993 – 2001**

Year	(Thousands of tonnes)					Total
	<i>Grain</i>	<i>Iron Ore</i>	<i>General Cargo</i>	<i>Coal</i>	<i>Other</i>	
1993	10,592	10,906	4,432	4,408	10,647	40,985
1994	12,464	12,625	7,019	4,528	12,255	48,891
1995	14,485	11,872	4,844	5,005	11,917	48,124
1996	12,158	13,362	6,056	5,460	12,903	49,939
1997	13,339	12,051	5,418	5,545	12,600	48,953
1998	12,483	12,117	7,182	5,510	13,839	51,131
1999	14,084	11,320	4,578	4,542	13,335	47,859
2000	13,209	11,315	5,065	4,346	12,638	46,573
2001 (prel)	11,752	8,624	3,046	4,804	12,409	41,635

Note: Combined traffic on the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

Stronger steel imports were offset by lower Canadian and US grain exports.

In 2000, the number of vessel transits was down from 1999 levels on both sections of the Seaway. There were 2,978 vessel transits on the MLO section, down from 3,141 in 1999, and 3,351 vessel transits on the Welland Canal section, down from 3,626 in 1999.

In 2000, general cargo (mostly steel) was the only commodity to register an overall increase from 1999 (10.7 per cent on the MLO section, one per cent on the Welland Canal). However, the strong traffic in the early part of the year dwindled in the last three months, and the decrease continued into 2001. Grain, iron ore, coal and other bulk cargo registered slight overall decreases.

### Rates and Tariffs

As part of the negotiated agreement with Seaway users, a two per cent toll increase for the Canadian section of the Seaway was implemented in 2001. This follows identical increases in 1998, 1999 and 2000. The increase implemented on June 1, 1998 was the first increase since 1993.

The 1998, 1999 and 2000 toll increases, with no discounts or reductions, were negotiated as part of the Seaway commercialization agreement. If the St. Lawrence Seaway Management Corporation had been unable to reach its financial goals, as set out in its business plan, it would have been required to implement toll increases higher than two per cent. However, because the SLSMC did meet or exceed its goals due to the successful 1998 and 1999 seasons, this was not necessary.

In the fourth and fifth years of the plan (2001 and 2002), the SLSMC is allowed to make discounts or reductions to the tolls if financial results continue to exceed the business plan's requirements. SLSMC expenditures were



lower than business plan targets for the third year in a row; accordingly, it increased the balance of its notional reserve account to \$8.5 million as of March 31, 2001. While the SLSMC did implement the required two per cent toll increase for the 2001 season, the positive reserve account allowed it to give users a 1.5 per cent toll rebate, effective only for the 2001 season.

### Financial Profile

This report does not compare SLSMC's financial statements with those of the St. Lawrence Seaway Authority because the latter exclude the revenues and expenses pertaining to the non-navigational assets, the income taxes relating to the St. Lawrence Seaway Authority, amortization expenses, and other expenses that are treated differently.

Seaway revenues in the 2000/01 fiscal year from tolls and other sources amounted to just over \$76,031,000, up slightly from \$76,026,000 for 1999/2000. At \$73.4 million, toll revenues were up slightly from the previous fiscal year. This can be attributed to the increase in steel shipments through the Seaway during 2000. Revenues from other navigation activities and licence fees totalled \$2.2 million in 2000/01, a 32.8 per cent increase over the \$1.7 million for 1999/2000.

Operating expenses were 3.8 per cent below business plan targets. Although the business plan foresaw a \$6.9 million operating deficit at the end of 2000/01, the SLSMC was able to reduce the shortfall to only \$1.8 million. Operating expenses amounted to \$53.5 million, with salaries, wages and benefits accounting for 85.8 per cent of the total. The asset renewal program totalled \$25.1 million for the year, compared with \$25 million for the previous year.

Table 9-23 compares the financial performance of the St. Lawrence Seaway for the fiscal years from 1999/2000 and 2000/01.

**TABLE 9-23: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1999/2000 AND 2000/01**

(Thousands of dollars)

Year	Operating Revenues	Operating Expenditures	Excess of Revenue over Expenses	Net Excess of Revenue over Expenses <sup>1</sup>
1999/2000 (April 1999 to March 2000)	76,026	75,156	358	630
2000/01 (April 2000 to March 2001)	76,031	80,045	(4,014)	(1,821)

1 Following contributions from the Capital Fund Trust.

Source: St. Lawrence Seaway Management Corporation

### Maintenance Activities

A key component of the SLSMC's commercialization agreement with Transport Canada is the Asset Renewal Plan. This plan allows for the expenditure of \$126 million in infrastructure maintenance and capital expenditures over the course of the first five-year business plan. The actual expenditure for 2000/01 was \$25,075,000. During the first three years of the business plan, the SLSMC has spent \$75.7 million on infrastructure, or 60 per cent of the overall allocation.

The Asset Renewal Plan is managed by the SLSMC and overseen by the Capital Committee (made up of two members from Transport Canada and two members of the SLSMC's Board). The Committee approves the asset renewal projects annually, and meets regularly to review and approve changes to the plan, as required, to ensure the reliability of the system.

In 2000/01, the majority of maintenance projects were carried out after the end of the navigation season as part of the winter maintenance program, as is the normal procedure.

### MARINE PILOTAGE

Marine pilotage services direct and control the navigation and/or ship handling of a vessel through coastal and inland waterways. In Canada, there are four regional pilotage authorities: Atlantic (APA), Laurentian (LPA), Great Lakes (GLPA) and Pacific (PPA). They report directly to the Minister of Transport and are mandated by the *Pilotage Act* to provide safe and efficient pilotage services that respond to the particular requirements of marine traffic and to the varied geography and climatic conditions of the waterways in their regions.

### FINANCIAL AND OPERATING PERFORMANCE

In 2001, pilotage revenues, on a nation-wide basis, did not exceed expenditures. As Table 9-24 shows, none of the four pilotage authorities managed to generate enough revenues to cover their expenditures. The results for 2001 show a shift away from positive net incomes over the past several years.

Table 9-24 shows the financial results for each pilotage authority from 1996 to 2001.

Total revenues dropped to almost 1999 levels in 2001. At the same time, expenses decreased, but by less than total revenues.

**TABLE 9-24: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1996 – 2001**

(Millions of dollars)				
Region	Year	Revenues	Expenditures	Net Income (Loss)
<b>Atlantic Pilotage Authority (APA)</b>	1996	8,030	7,538	492
	1997	9,638	8,595	1,043
	1998	9,466	8,796	670
	1999	10,934	9,970	964
	2000	11,983	11,240	743
	2001	12,338	12,531	(193)
Per cent change		<b>3.0</b>	<b>11.5</b>	<b>(126.0)</b>
<b>Laurentian Pilotage Authority (LPA)</b>	1996	36,019	38,847	(2,828)
	1997	38,185	39,019	(834)
	1998	41,311	40,847	464
	1999	41,776	41,300	476
	2000	41,347	41,717	(370)
	2001	41,115	41,275	(160)
Per cent change		<b>(0.6)</b>	<b>(1.1)</b>	<b>(56.8)</b>
<b>Great Lakes Pilotage Authority (GLPA)</b>	1996	12,659	11,643	1,016
	1997	13,251	12,041	1,210
	1998	17,249	15,548	1,701
	1999	14,545	14,898	(353)
	2000	15,542	16,635	(1,093)
	2001	13,408	15,542	(2,276)
Per cent change		<b>(13.7)</b>	<b>(6.6)</b>	<b>108.2</b>
<b>Pacific Pilotage Authority (PPA)</b>	1996	36,039	35,859	180
	1997	39,802	38,519	1,283
	1998	37,441	37,056	385
	1999	39,106	38,781	325
	2000	41,702	42,120	(418)
	2001	40,290	40,851	(561)
Per cent change		<b>(3.4)</b>	<b>(3.0)</b>	<b>38.8</b>
<b>Total Pilotage Authorities</b>	1996	92,747	93,887	(1,140)
	1997	100,876	98,174	2,702
	1998	105,467	102,247	3,220
	1999	106,361	104,949	1,412
	2000	110,574	111,712	(1,138)
	2001	107,132	110,199	(3,209)
Per cent change		<b>(3.1)</b>	<b>(1.4)</b>	<b>182.0</b>

Source: Pilotage authorities' Annual Reports (2001 preliminary)

**TABLE 9-25: TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1996 – 2001**

	1996	1997	1998	1999	2000	2001
<b>Atlantic (APA)</b>						
Total Assignments	8,576	9,760	9,726	11,090	11,498	11,751
Assignments per Pilot	186	212	187	213	229	240
<b>Laurentian (LPA)</b>						
Total Assignments	21,342	20,941	22,018	21,654	20,713	18,655
Assignments per Pilot	123	120	121	120	114	96
<b>Great Lakes (GLPA)</b>						
Total Assignments	6,901	7,192	9,085	8,108	8,605	7,151
Assignments per Pilot	121	113	147	118	106	106
<b>Pacific (PPA)</b>						
Total Assignments	13,403	14,212	13,267	13,776	14,585	13,435
Assignments per Pilot	113	124	115	117	130	118
<b>Total All Authorities</b>						
Total Assignments	50,224	52,105	54,096	54,628	55,402	50,992
Assignments per Pilot	126	129	132	131	129	120

Source: Pilotage authorities' annual reports

The average number of assignments per pilot — a commonly used measure of efficiency of pilotage services — increased between 1996 and 1998, but declined in 1999, 2000 and 2001. Table 9-25 shows the number of assignments for each pilotage authority and the total for all authorities between 1996 and 2001. The variations among the authorities and the fluctuations over this period are due largely to differences in traffic levels. Overall, total assignments grew from 1996 to 2000, but dropped in 2001.

## CANADIAN COAST GUARD

### RESPONSIBILITIES

Of the four key objectives of the Canadian Coast Guard's mission, three are directly related to transportation: to ensure safe and environmentally responsible use of Canada's waters; to facilitate the use of Canadian waters for shipping, recreation and fishing; and to provide marine expertise in support of Canada's domestic and international interests.

The Coast Guard fulfills its mission through five business lines: marine navigation services; marine communications and traffic services; icebreaking operations; rescue, safety and environmental response; and fleet management. It delivers these business lines in six regions across Canada under authority of the Department of Fisheries and Oceans (DFO). These business lines are linked to DFO's two key result commitments:

- the conservation and biological sustainability of fisheries resources, marine and freshwater habitats, and a protected environment; and
- the provision of safe, efficient and accessible waterways and harbours.

The Coast Guard business lines cover a range of marine programs, policies and services that deal with a broad cross section of clients within the marine community. These clients include commercial shipping interests; recreational boaters; the fishing industry; ferry services; tug and barge resupply operations in the North; cruise lines; private-sector shippers; provincial, municipal and territorial governments; and federal government departments. The Coast Guard also serves the general public by working to preserve ecosystems, to ensure that water supplies remain unpolluted by oil and chemical spills, and to protect recreational resources.

## Marine Navigation Services

The Coast Guard's Marine Navigation Services (MNS) objective is to provide secure safe, efficient and accessible waterways. It fulfills this objective by providing, operating and maintaining a system of navigation aids; ensuring safe shipping channels; protecting the public right to navigation; and protecting the environment.

The MNS navigational infrastructure includes 248 automated light stations, 50 of which are staffed; five LORAN C communication stations; 20 Differential Global Positioning System (DGPS) transmitter sites; and more than 6,000 land-based fixed marine aids and more than 12,000 floating aids.

During 2001, the Marine Navigation Services pursued several initiatives to modernize navigational aids. This included continuing to modernize, maintain, implement and upgrade information systems such as the national services and databases on the condition and use of Canadian waterways; the Aids Program Information System (APIS); the Marine Aids Costing Model (SRAN); and the Navigable Waters Database System. The Marine Navigation Services also pursued amendments to the *Navigable Waters Protection Act*.

## Marine Communication and Traffic Services

Marine Communications and Traffic Services (MCTS) derives its functions primarily from the *Canada Shipping Act* and the *Safety of Life at Sea Convention*. These functions are to provide distress and safety communications and coordination; ensure vessel screening to prevent entry of unsafe vessels into Canadian waters; regulate vessel traffic movements; and manage an integrated system of marine information and public correspondence services. MCTS also supports economic activities by optimizing traffic movements and port efficiency, and facilitating industry ship-shore communications.

Marine Communications and Traffic Services relies on staffed communications centres and on remote transmitter and receiver sites to support these functions.

The MCTS business line fully supports the Oceans Strategy by looking for ways to better monitor and manage marine protected areas. As such, it is a core element of the national movement toward sustainable development for oceans and marine resources.

This group is also improving its surveillance capability by developing implementation strategies for a universal Automatic Identification System (AIS). AIS is a leading-edge marine navigation technology that provides mariners and authorities with a more efficient and cost-

effective means of service delivery. MCTS pursued the implementation of the Global Maritime Distress Safety System (GMDSS) to improve communication capabilities and also reviewed infrastructure to identify further potential efficiencies through the application of technological changes.

## Icebreaking Operations

The Icebreaking Operations business line is responsible for providing icebreaking escorts, channel maintenance, flood control, harbour breakouts, and ice-routing and information services for marine traffic navigating through or around ice-covered waters. This group continued to advise the Government of Nunavut on the movement of cargo for the annual resupply of northern settlements, and provided resupply services to selected remote sites such as Eureka and Pelly Bay.

The icebreaking program has moved to a more client-focused, demand-driven service. As a result, commercial users now pay a percentage of the allocated costs in the form of an icebreaking service fee.

During 2001, Icebreaking Operations continued to work with the US Coast Guard, the North Atlantic Ice Patrol and other governments involved with icebreaking activities to maintain international expertise and recognition. It also continued to strengthen its collaboration with Transport Canada's Marine Safety Branch for the Harmonization of Polar Ship Rules to protect Canada's position and to proactively deal with issues related to icebreaking operations or ships operating in ice-covered waters.

## Rescue, Safety and Environmental Response

The Rescue, Safety and Environmental Response (RSER) business line includes three main activities: maritime search and rescue (SAR); environmental response; and operating the office of boating safety, which regulates recreational boaters, recreational boats and recreational boating activities. The main objective of this business line is to save lives and protect the marine environment.

The RSER group relies on rescue centres, SAR stations with in-shore rescue boats and several spill-response equipment depots to support its activities.

In 2001 the RSER group implemented major new regulating measures to improve boating safety. These measures covered mandatory operator competency; age and horsepower restrictions; and modernization of small vessel regulations. The RSER group also worked to improve the effectiveness of the oil spill preparedness and response regime by reviewing regulations, standards and guidelines.



In addition, this group continued dialogue with major stakeholders with a view to defining a Canadian marine hazardous and noxious substances (HNS) spill preparedness and response regime.

During 2001, the Canadian Coast Guard once again provided an effective maritime search and rescue service for Canadians.

### Fleet Management

The Fleet Management business line supports all Department of Fisheries and Oceans strategic outcomes by providing safe, cost-effective and efficient sea and air support to program areas. This includes acquiring, maintaining and scheduling Canadian Coast Guard vessel and air fleets that sustain the Marine Navigation Services, Icebreaking Operations, Rescue, Safety and Environmental Response, Fisheries Management, and Fisheries and Oceans Science and Hydrography. Fleet Management also addresses any required increases in fleet capabilities by arranging with other government departments and the private sector to provide additional sea and air support to the programs.

During 2001, Fleet Management developed a pricing strategy, client service agreements and a concept of operations, as well as a strategic plan and a performance measurement framework. It also pursued the implementation of the fleet safety management system to meet the standards of the International Management Code for the Safe Operation of Ships (ISM) Code.

The Canadian Coast Guard manages a fleet of 108 major ships (operating) and more than 500 small craft.

### FINANCIAL SITUATION

Through a combination of efficiency measures and reduced operations, the Coast Guard has reduced its net expenditures on all of its services to \$140 million, or 30 per cent, over the four-year period ending 1998/99.

Table 9-26 shows the Coast Guard's financial results for its five major business lines for the last four fiscal years.

The Coast Guard has implemented three fees for commercial users of specific programs. The Marine Navigation Services Fee, was introduced in June 1996. This fee is intended to collect \$27.7 million annually, which includes administration costs. In 1998, a transit-based Icebreaking Services Fee was introduced. This fee is intended to collect \$6.9 million annually, which includes administrative costs. The Maintenance Dredging Services Tonnage Fee was established in September 1997. This fee was intended as an interim measure to cover the full costs incurred by Coast Guard to provide maintenance dredging services in the St. Lawrence Ship Channel. The Coast Guard is continuing to work with representatives of the commercial marine transportation industry to arrive at a long-term arrangement, including the transfer of responsibilities to industry for these dredging services.

**TABLE 9-26: CANADIAN COAST GUARD REVENUES AND EXPENDITURES<sup>1</sup>, 1998/99 – 2001/02**

(Millions of dollars)				
Item	1998/99	1999/2000	2000/01	2001/02 <sup>2</sup>
Revenues	39.9	43.7	43.4	42.1
Gross Expenditures	471.0	480.2	495.5	520.0
Net Expenditures <sup>3</sup>	431.1	436.5	452.1	477.9

1 Includes Marine Navigation Services (MNS); Marine Communication and Traffic Services (MCTS); Icebreaking Services; Rescue, Safety and Environmental Response (RSER); and Fleet Management.

2 Reflects forecasted expenditures to year-end and will not be finalized until the end of the fiscal year.

3 Gross Expenditures minus Revenues.

Source: Department of Fisheries and Oceans

Table 9-27 shows a breakdown of the Coast Guard's revenues and expenditures by its five main business lines for fiscal year 2001/02.

**TABLE 9-27: CANADIAN COAST GUARD REVENUES AND BUDGETED EXPENDITURES, 2001/02**

(Millions of dollars)						
	Business Line					CCG Total
	MNS	MCTS	ICE	RSER	Fleet Mgmt.	
Revenues	32.5	0.1	9.4	0.1	0.0	42.1
Gross Expenditures	131.0	66.4	54.9	122.6	145.1	520.0
Net Expenditures <sup>1</sup>	98.5	66.3	45.5	122.5	145.1	477.9

Notes: MNS: Marine Navigation Services; MCTS: Marine Communication and Traffic Services; ICE: Icebreaking Services; RSER: Rescue, Safety and Environmental Response;

CCG: Canadian Coast Guard.

1 Gross Expenditures minus Revenues.

Source: Department of Fisheries and Oceans

# AIR TRANSPORTATION INFRASTRUCTURE

## AIR NAVIGATION SYSTEM

NAV Canada, which became the owner and operator of Canada's Air Navigation System (ANS) when the system was transferred from the federal government on November 1, 1996, is a private, non-share capital corporation. The system comprises seven Area Control Centres (ACC), one terminal control unit, 43 control towers, 77 flight service stations and 67 maintenance centres, as well as more than 1,400 ground-based navigational aids. NAV Canada provides air traffic control services, flight information, weather briefings, airport advisories and electronic aids to navigation.

## SYSTEM IMPROVEMENTS

Since 1996, NAV Canada has invested \$600 million in system improvements. NAV Canada introduced a variety of initiatives to enhance safety in 2000/01. Some of the more notable projects include:

- NAV Canada formed an action team with Transport Canada to oversee the implementation of recommendations prepared by both groups to reduce runway incursions. One of the recommendations involved a heightened awareness program for pilots and for airport and NAV Canada employees.
- NAV Canada invested \$27 million in Flight Information Centres (FIC) to improve customer service and safety through the provision of faster and better-quality weather information. Customers will be able to access this information through toll-free numbers and pilot

information kiosks. The first FICs were installed in Halifax and Edmonton, and work continues on FICs in Quebec City, London, Winnipeg and Kamloops.

- The radar system in northern Canada is being expanded and improved with the installation of new state-of-the-art radar facilities. Work to further improve the system was completed in Yellowknife and Kuujuaq and construction is proceeding in La Ronge, Iqaluit, Chisasibi and Stony Rapids, with several other new sites under consideration.
- In March 2001, NAV Canada began operations at its new air traffic control tower in Saskatoon. This tower accommodates NAV Canada's Saskatoon Flight Service Station and incorporates technology to better manage electronic flight data. Saskatoon is the fifth tower to be opened since NAV Canada's inception. Two other new towers were also opened in late 2001, in Springbank, Alberta and Kelowna, British Columbia.
- NAV Canada continues to operate one of the safest air navigation services in the world, with just over two operating irregularities per 100,000 flight movements.

## FINANCIAL PERFORMANCE

For the fiscal year ending August 31, 2001, NAV Canada reported \$916 million in revenues, \$717 million in operating expenses, and \$198 million in interest, depreciation and restructuring expenses. This resulted in no excess revenues over expenses. In 2000, however, fiscal results of \$909 million in total revenues, \$703 million in operating expenses, and \$204 million in interest, depreciation and restructuring expenses resulted in \$2 million in excess revenues over expenses. Table 9-28 compares NAV Canada financial results in 2000 and 2001.

Due to a drastic decline in air traffic around the world, NAV Canada has forecast a \$145 million shortfall compared with its original budget for fiscal year 2001/02. As a result, NAV Canada's Board of Directors has approved an action plan aimed at lowering costs and increasing revenues. Employees, suppliers and customers are contributing to this plan.

**TABLE 9-28: FINANCIAL SUMMARY FOR NAV CANADA, 2000 AND 2001**

Item	(Thousands of dollars)	
	2000	2001
Total Revenues	909,974	915,653
Operating Expenses	703,465	717,176
Other Expenses	203,859	198,477
Excess of Revenue over Expenses	1,750	-
Capital Expenditures	101,623	114,034

Source: NAV Canada Annual Report, 2000

### CANADA AIRPORTS ACT

In 2001, the Government of Canada announced its intention to develop a *Canada Airports Act*. The proposed legislation will clarify the roles and responsibilities of airport authorities. It will also focus on several other issues, including accountability to the public and users, improved governance, principles for setting fees, oversight of ancillary activities, and requirements to respect Canada's international obligations.

The legislation builds upon Canada's National Airports Policy (NAP) announced in 1994 and will complete the legislative base for all components of the air industry, including NAV Canada, airlines and airports. The legislation will address the issues raised in the *Local Airport Authority (LAA) Lease Review Consultation Report*, the concerns expressed by the Auditor General in October 2000 and the July 2001 Canadian Transportation Act Review Panel Report. The bill is expected to be tabled in the House of Commons in June 2002.

Source: Transport Canada

## AIRPORTS

Canada's approximately 1,700 aerodromes are divided into three categories: water bases for float planes, heliports for helicopters and land airports for fixed wing aircraft. Aerodromes refer to facilities registered with Transport Canada as aircraft landing and take-off sites.

Most of Canada's commercial activity takes place at certified land airports, sites that because of their level of activity or location are required to meet Transport Canada's airport certification standards.

At the close of 2001, the Canada Flight Supplement and the Canada Water Aerodrome Supplement listed 1,716 certified or regulated sites. Table 9-29 shows the number of airports for fixed-wing aircraft.

**TABLE 9-29: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 2001**

	<i>Certified<sup>1</sup></i>	<i>Registered</i>	<i>Military</i>	<i>Total</i>
Heliports	172	79	9	260
Water	11	332	0	343
Land	354	746	13	1,113
<b>Total</b>	<b>537</b>	<b>1,157</b>	<b>22</b>	<b>1,716</b>

<sup>1</sup> *Canada Flight Supplement*, November 30, 2000.  
Official Airline Guide, December 15, 2000.

Source: *Transport Canada*

A total of 264 land airports offered scheduled passenger service, while the other 1,113 were available for other public and private uses.

While many aerodromes are privately owned, the majority of certified airports are publicly owned. Since the introduction of the National Airports Program (NAP) in 1994, the federal government has been reducing its role in the management, operation and ownership of airports. This process of devolution has been largely completed, and the current state of transfer is posted monthly on the Internet at [www.tc.gc.ca/programs/airports/status/menu.htm](http://www.tc.gc.ca/programs/airports/status/menu.htm).

The October 2000 Report of the Auditor General noted that overall the operation of NAS airports by local interests has been successful. It also noted that there were policy gaps in the areas of ancillary activities, Airport Improvement Fees and contracting out. The report recommended that Transport Canada's lease monitoring role be enhanced. As a result, the department has instituted a more formal lease review process for leased NAS airports, including a national training component.

## AIRPORT IMPROVEMENT FEES

Airport Improvement Fees (AIFs) have been introduced in recent years by a number of NAS airport authorities and Non-NAS airports. On average, AIFs now represent approximately 20 percent of total NAS airport revenues and this percentage continues to grow. The AIF rates currently vary from \$5.00 to \$28.00 per passenger. The majority of AIFs are collected through the air carriers' ticket systems, yet some are still collected directly by the respective airport. The two most notable developments in this area were Fredericton airport authority's introduction of a Passenger Facility Fee to subsidize airport operations and the Thunder Bay airport authority's decision to eliminate the AIF in November 2001. AIFs totalled \$183.4 million or 15 per cent of total NAS revenues in 2001. However, on average, the AIF accounted for 28 per cent of total revenues generated by the 15 airport authorities collecting such fees throughout 2001.

**TABLE 9-30: AIRPORT IMPROVEMENT FEES (AIFs) AT CANADIAN NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS**

<i>Airport</i>	<i>Charge per Passenger</i>	<i>Date Established and/or Increased<sup>1</sup></i>	<i>Amount Collected (\$000) 2000</i>	<i>Collected directly<sup>2</sup></i>	<i>Collected Through Tickets<sup>3</sup></i>
Calgary	\$12	July 2001 (Increased)	32,105		X
Charlottetown	\$10	Jan. 2001	-	X	
Edmonton	\$10	Oct. 1999	16,584		X
Fredericton <sup>4</sup>	\$12 <sup>4</sup>	July 2001	-		X
Gander <sup>5</sup>	\$12	July 2001	-		X
Halifax	\$10	Dec. 2000	-		X
Kelowna	\$5				
	\$8	Sept. 2000			
	March 2002	(To increase)	2,157		X
London	\$10	Sept. 2001 (Increased)	932		X
Moncton	\$10	Oct. 1998	1,529	X	
Montreal	\$15 (Dorval) \$10 (Mirabel)	July, 2001 (Increased)	32,355	X	
Ottawa	\$10	Aug. 1999	14,949		X
Quebec City <sup>5</sup>	\$10	Sept. 2001	-		X
Regina	\$10	Sept. 1999	3,718		X
Saint John	\$10	Sept. 1999	836	X	
Saskatoon	\$5	Aug. 1999	1,839		X
St. John's	\$10	Sept. 1999	3,960		X
Thunder Bay - Eliminated		Oct. 2001	1,850		
Toronto	\$7 Connecting \$10 Departing	June 2001	-		X
Vancouver	\$5 to \$15 <sup>6</sup>	May 1993	56,918	X	
Victoria	\$5	Sept. 1999	2,390		X
Winnipeg	\$10	June 2000	11,268		X

Note: N/A = Not available.

<sup>1</sup> The date of implementation of the AIF for tickets sold.

<sup>2</sup> Fees collected directly from passengers before embarking.

<sup>3</sup> Fees included automatically in the price of each departing ticket due to an airport improvement fee agreement.

<sup>4</sup> Fredericton collects a Passenger Facility Fee for airport operation expenditures.

<sup>5</sup> Quebec City, Fredericton and Gander are three newly transferred NAS airports.

<sup>6</sup> Vancouver: \$5 for destinations within British Columbia, Yukon; \$10 for other North America destinations, Mexico and Hawaii; and \$15 for other international destinations.

Source: *Airport authority annual reports and Web sites*



**TABLE 9-31: AIRPORT IMPROVEMENT FEES (AIFS) AT CANADIAN NON-NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS**

<i>Airport</i>	<i>Charge per Passenger</i>	<i>Date Established and/or Increased<sup>1</sup></i>	<i>Amount Collected (\$'000) 2000</i>	<i>Collected directly<sup>2</sup></i>	<i>Collected Through Tickets<sup>3</sup></i>
Abbotsford	\$5	June 1999	1,133		X
Bathurst	\$10	N/A	N/A	X	
Castlegar	\$5	N/A	N/A	X	
Comox Valley	\$5	April 2002	-		X
Cranbrook	\$15	N/A	N/A	X	
Fort St. John	\$10	Jan. 2002	684		X
Gaspé	\$10	Jan. 2000	N/A	X	
Hamilton	\$5	April, 2001	-		X
Kamloops	\$12	N/A	N/A	X	
Lethbridge	\$5	Oct. 2000	N/A		X
Nanaimo	\$4	N/A	N/A		X
Peace River	\$15 to \$20 <sup>5</sup>	N/A	N/A		X
Prince Rupert	\$26 to \$28 <sup>6</sup>	N/A	N/A	X	
Sault Ste Marie	\$10	Jan. 2002	-		X
Sydney	\$10 to \$19 <sup>4</sup>	N/A	N/A	X	
Stephenville	\$10	Feb. 2001	-		X
Timmins	\$10	Jan. 2001	-		X

Note: N/A = Not available.

1 The date of implementation of the AIF for tickets sold.

2 Fees collected directly from passengers before embarking.

3 Fees included automatically in the price of each departing ticket due to an airport improvement fee agreement.

4 Sydney: \$10 for travel within Nova Scotia, \$19 for travel within Canada and \$18 for international travel.

5 Peace River: \$15 for Peace Air flights and \$20 for Air Canada flights.

6 Prince Rupert: \$28 for travel within Canada and \$26 for international travel

Source: Airport authority annual reports and Web sites

## AIRPORT AUTHORITY REVENUES AND EXPENSES

Airport authorities operate the majority of federally owned NAS airports under long-term leases, with the exception of the three territorial NAS airports that are owned and operated by territorial governments. The airport authorities are incorporated as not-for-profit, non-share capital corporations, with independent Boards of Directors. Their financial statements for the year ending in 2000 are shown in Table 9-32.

AIFs are not directly comparable between airports as they have been put in place to cover the cost of financing airport improvements seen to be necessary at the local level, and have to be assessed with regard to other fees and charges affecting the overall cost of travel to the passenger. The challenges for airports and governments are to ensure that travellers and carriers are more aware of the charges and the expenses they cover and that travellers are adequately consulted on fees directly charged to them by airports across Canada.

TABLE 9-32: AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 2000

	(Thousands of dollars)									
<i>Financial Information</i>	<i>Calgary</i>	<i>Vancouver</i>	<i>Edmonton</i>	<i>Montreal</i>	<i>Toronto</i>	<i>Ottawa</i>	<i>Winnipeg</i>	<i>Victoria</i>	<i>Halifax</i>	<i>Kelowna</i>
Aeronautical Revenues	37,464	78,863	18,477	64,965	278,116	20,550	14,382	3,227	15,845	4,303
Non-Aeronautical Revenues	34,577	116,909	15,301	78,419	171,542	17,641	11,984	4,457	10,785	1,640
Airport Improvement Fees	32,105	56,918	16,584	32,360	0	14,949	11,268	2,390	0	1,779
Federal Government Subsidies	-	-	-	-	-	-	-	-	-	-
<b>Total Revenues</b>	<b>104,146</b>	<b>252,690</b>	<b>50,362</b>	<b>175,744</b>	<b>449,658</b>	<b>53,140</b>	<b>37,634</b>	<b>10,074</b>	<b>26,630</b>	<b>7,722</b>
Expenses (less Interest Charges)	68,942	174,358	39,643	170,689	361,306	31,389	26,360	6,059	19,344	3,789
<b>Income</b>	<b>35,204</b>	<b>78,332</b>	<b>10,719</b>	<b>5,055</b>	<b>88,352</b>	<b>21,751</b>	<b>11,274</b>	<b>4,015</b>	<b>7,286</b>	<b>3,933</b>
Interest Charges	0	21,230	3,577	0	67,873	280	0	0	230	0
<b>Net Income</b>	<b>35,204</b>	<b>57,102</b>	<b>7,142</b>	<b>5,055</b>	<b>20,479</b>	<b>21,471</b>	<b>11,274</b>	<b>4,015</b>	<b>7,056</b>	<b>3,933</b>
Acquisition of Capital Assets	79,409	66,604	77,752	81,436	661,117	13,763	4,225	6,059	5,234	3,213
Enplaned / Deplaned Passengers (thousands)	7,943	15,337	3,843	9,750	27,759	3,445	2,937	1,114	2,524	837
<b>Ratios:</b>										
Expenses as a per cent of Revenues	66.20	69.00	78.72	97.12	80.35	59.07	70.04	60.14	72.64	49.07
Aeronautical Revenues as a per cent of Total	35.97	31.21	36.69	36.97	61.85	38.67	38.22	32.03	59.50	55.72
Non-Aeronautical Revenues as a per cent of Total	33.20	46.27	30.38	44.62	38.15	33.20	31.84	44.24	40.50	21.24
<b>Revenues per Passenger (excluding subsidies)</b>	<b>13.11</b>	<b>16.48</b>	<b>13.10</b>	<b>18.03</b>	<b>16.20</b>	<b>15.43</b>	<b>12.81</b>	<b>9.04</b>	<b>10.55</b>	<b>9.23</b>
<b>Expenses per Passenger</b>	<b>8.68</b>	<b>12.75</b>	<b>11.25</b>	<b>17.51</b>	<b>15.46</b>	<b>9.19</b>	<b>8.98</b>	<b>5.44</b>	<b>7.76</b>	<b>4.53</b>

	<i>Saskatoon</i>	<i>Regina</i>	<i>St. John's</i>	<i>Thunder Bay</i>	<i>London</i>	<i>Moncton</i>	<i>Saint John</i>	<i>Charlottetown</i>	<i>Quebec City</i>	<i>TOTAL</i>
Aeronautical Revenues	3,157	3,359	5,193	3,484	2,603	2,343	1,603	1,169	633	559,736
Non-Aeronautical Revenues	3,982	2,923	2,797	1,446	2,003	2,291	1,067	1,199	559	481,522
Airport Improvement Fees	1,839	3,087	3,960	1,850	579	1,529	836	0	0	182,033
Federal Government Subsidies	290	0	0	0	0	0	1,142	1,595	5,139	8,166
<b>Total Revenues</b>	<b>9,268</b>	<b>9,369</b>	<b>11,950</b>	<b>6,780</b>	<b>5,185</b>	<b>6,163</b>	<b>4,648</b>	<b>3,963</b>	<b>6,331</b>	<b>1,231,457</b>
Expenses (less Interest Charges)	4,770	5,105	7,108	4,005	3,593	4,653	2,767	2,830	1,338	938,048
<b>Income</b>	<b>4,498</b>	<b>4,264</b>	<b>4,842</b>	<b>2,775</b>	<b>1,592</b>	<b>1,510</b>	<b>1,881</b>	<b>1,133</b>	<b>4,993</b>	<b>293,409</b>
Interest Charges	0	10	48	12	0	365	0	6	0	93,631
<b>Net Income</b>	<b>4,498</b>	<b>4,254</b>	<b>4,794</b>	<b>2,763</b>	<b>1,592</b>	<b>1,145</b>	<b>1,881</b>	<b>1,127</b>	<b>4,993</b>	<b>199,778</b>
Acquisition of Capital Assets	952	1,706	12,191	676	1,831	1,108	464	3,225	34	1,020,999
Enplaned / Deplaned Passengers (thousands)	808	748	715	491	391	372	178	138	110	79,440
<b>Ratios:</b>										
Expenses as a per cent of Revenues	51.47	54.49	59.48	59.07	69.30	75.50	59.53	71.41	21.13	76.17
Aeronautical Revenues as a per cent of Total	34.06	35.85	43.46	51.39	50.20	38.02	34.49	29.50	10.00	45.45
Non-Aeronautical Revenues as a per cent of Total	42.97	31.20	23.41	21.33	38.63	37.17	22.96	30.25	8.83	39.10
<b>Revenues per Passenger (excluding subsidies)</b>	<b>11.11</b>	<b>12.53</b>	<b>16.71</b>	<b>13.81</b>	<b>13.26</b>	<b>16.57</b>	<b>19.70</b>	<b>17.16</b>	<b>10.84</b>	<b>15.40</b>
<b>Expenses per Passenger</b>	<b>5.90</b>	<b>6.84</b>	<b>10.01</b>	<b>8.18</b>	<b>9.19</b>	<b>13.49</b>	<b>15.54</b>	<b>20.55</b>	<b>12.16</b>	<b>12.99</b>

Note: Aeronautical and Non-Aeronautical Revenues: Aeronautical revenues are generated principally from airlines and other commercial aviation sources, and consist mainly of landing fees and terminal fees, plus the recovery of security costs. Revenues from concessionaire sales (stores, restaurants etc.), car parking and space rental are considered non-aeronautical.

Airport Improvement Fees represent the amount collected.

Please be advised that the Net Income figures for Regina and London will not equal those shown in their audited financial statements due to their accounting treatment of Airport Improvement Fees. Halifax and Quebec City transferred February 1, 2000 and November 1, 2000 respectively. Their 2000 results reflect their numbers from the date of transfer.

Source: Financial Figures - Airport Authority 2000 Annual Reports, Kelowna - City of Kelowna 2000 Annual Financial Report. Passenger Volume Figures - Transport Canada July 2001

## AIRPORT CAPITAL ASSISTANCE PROGRAM

Since April 1995, Transport Canada has administered the Airport Capital Assistance Program (ACAP) to help eligible non-National Airports System airports finance capital projects related to safety, asset protection and operating cost reduction. To be eligible, the airports must receive a minimum of 1,000 passengers annually, meet airport certification requirements, and not be owned by the federal government. In 2001, the program approved 24 projects at 21 airports for funding at an estimated total of \$37.5 million. Table 9-33 shows by province the allocation of funding approved since the inception of the program.

The projects approved in 2001 under the ACAP program are listed in Appendix 9-1.

### RENT POLICY REVIEW

In 2001, the Government of Canada announced that it would review the rent policy for leased airports in the National Airports System (NAS), as the majority of transfers to local operators were completed. The review is in response to the demands of airports and aviation communities and to the concerns expressed by the Auditor General in October 2000. It will ensure that the government's airport rent policy balances the interests of all stakeholders, including the air industry and Canadian taxpayers. The review will be conducted at the same time as, but independently of, the development of the proposed *Canada Airports Act*, and will involve consultations with stakeholders.

Source: Transport Canada

TABLE 9-33: AIRPORT CAPITAL ASSISTANCE PROGRAM EXPENDITURES BY PROVINCE, 1995/96 – 2001/02

(Thousands of dollars)								
Province	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	Total
Newfoundland and Labrador					315.4	3,011.3	1,539.1	4,865.8
Prince Edward Island								0.0
Nova Scotia				401.5	2,701.5	428.0	2,956.1	6,487.1
New Brunswick	509.3	885.3	1,086.7	4,553.2	295.6	748.3	58.5	8,136.9
Quebec			3,204.1	5,911.2	1,627.5	10,304.0	3,061.0	24,107.8
Ontario	909.4	3,232.7	13,465.4	7,592.6	2,932.4	8,115.9	8,987.2	45,235.6
Manitoba	151.1	172.0	970.4	2,186.8	3,850.4	2,014.0	3,347.1	12,691.8
Saskatchewan		2,876.6	451.8	1,575.3	5,102.9	3,087.2	3,365.9	16,459.7
Alberta	90.0	815.2	1,128.5	3,016.6	999.2	3,519.3	7,951.1	17,519.9
British Columbia	33.0	1,416.8	880.1	3,306.9	2,095.5	5,566.9	9,854.0	23,153.2
Northwest Territories					230.4	169.1	1,282.8	1,682.3
Yukon							603.7	603.7
Nunavut						1,655.2	205.0	1,860.2
<b>Total</b>	<b>1,692.8</b>	<b>9,398.6</b>	<b>21,187.0</b>	<b>28,544.1</b>	<b>20,150.8</b>	<b>38,619.2</b>	<b>43,211.5</b>	<b>162,804.0</b>

Source: Transport Canada



## APPENDIX 9-1

## AIRPORTS CAPITAL ASSISTANCE PROGRAM — PROJECTS APPROVED IN 2001

Province	Site	Description	Funded	Project funding in thousands of dollars	
				Site Total	Province Total
Newfoundland and Labrador	Stephenville	Restore Snowblower - Purchase Runway Sweeper	02.03.01	252.3	
		Purchase Replacement Engine for Snowblower	10.12.01	25.0	277.3
Prince Edward Island					0.0
Nova Scotia	Sydney	Airside Rehabilitation Projects	02.03.01	3,735.2	3,735.2
New Brunswick	Bathurst	Electrical Improvements	02.03.01	47.5	47.5
Quebec	Val d'Or	Drainage work	02.03.01	2,490.3	
	Alma	Runway extension	02.03.01	1,770.4	
	Rouyn	Omni-directional Approach Lighting System (ODALS)	02.03.01	242.9	
	Tête-à-la-Baleine	Approach Lighting System	02.03.01	160.0	
	Alma	Equipment purchase	02.03.01	306.3	
	Kuujuarapik	Rehabilitation of Approach Lighting System	11.07.01	795.0	5,764.9
Ontario	Toronto City Centre	Installation of Buoys & Signage,			
		Runway 08-26 Approach	02.03.01	474.5	
	Toronto City Centre	Replacement of Fire Truck	02.03.01	418.0	
	Sault-Ste-Marie	Rehab Runway 12-30, Taxis B, F, G and Subdrains	06.03.01	3,820.2	
	Fort Frances	Rehabilitate Runway 12-30	02.03.01	1,152.4	
	Kenora	Replace Runway Sweeper	22.11.01	150.9	6,016.0
Manitoba	The Pas	Rehabilitation of Airside Infrastructure	02.03.01	4,125.4	4,125.4
Saskatchewan					0.0
Alberta	Fort McMurray	Rehabilitate Airfield Lighting	13.03.01	1,817.4	
		Runway 12-30 Rehabilitation	02.03.01	2,183.0	4,000.4
British Columbia	Abbotsford	Runway 07-25 Selective Rehabilitation	02.03.01	659.2	
	Bella Bella	Airside Pavement Rehabilitation	02.03.01	3,065.7	
	Abbotsford	South Apron Rehabilitation	02.03.01	1,854.8	
	Campbell River	Helicopter Parking Position (Touchdown Pad)	02.03.01	163.9	
	Cranbrook	Runway 34 Turnabout Improvements	02.03.01	73.0	
	Terrace	Runway 15-33 Overlay	02.03.01	2,331.0	8,147.6
Northwest Territories	Tulita	Airside Pavement and Electrical Rehab	02.03.01	1,899.8	1,899.8
Yukon	Dawson	Airside Rehabilitation	02.03.01	3,960.0	3,960.0
Nunavut	Baker Lake	Rehabilitation of Airside Surfaces	02.03.01	1,815.2	1,815.2
				Total	39,789.3

Source: Transport Canada

# STRUCTURE OF THE TRANSPORTATION INDUSTRY 10

*Transportation being used by all sectors of the economy, the structure of each transportation industry has to adjust itself to the changes in the economy and evolving transportation needs.*

Transportation is integrated to society, and its priorities and goals shift as society's needs change. Society's concerns evolve, forcing transportation to adjust. Various factors come into play in shaping the evolution of the industry structure of each mode of transportation, factors such as competitive forces, price changes, financial results, changes in needs, traffic levels.

This chapter presents an overview for the four modes of transportation in Canada's transportation industry — rail, trucking and bus, marine, and air. Major events, including legislative changes are highlighted.

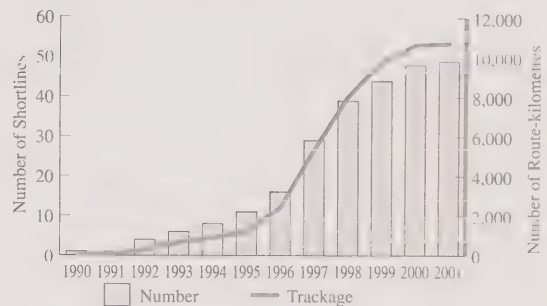
## RAIL INDUSTRY STRUCTURE

### MAJOR EVENTS IN 2001

For the second consecutive year, the structure of the Canadian railway industry underwent modest change. Although no new shortline companies were created, signs of restructuring of the shortline sector continued. Figure 10-1 shows the growth in Canada's shortline rail sector from 1990 to 2001.

In September 2001, Canadian National completed its acquisition of Wisconsin Central, a US-based shortline company. This gave CN a connection to western Canada running south of the Great Lakes (via Chicago) that it owns completely. Previously, CN had running rights with Burlington Northern and, more recently, Wisconsin Central that allowed it to move goods to US markets via its Fort Frances gateway over its Duluth, Winnipeg and Pacific subsidiary in Minnesota. One of the features of the Wisconsin Central acquisition was the corollary acquisition of Algoma Central Railway, which itself had been acquired several years ago by Wisconsin Central. The Algoma Central link provides CN with an additional

FIGURE 10-1: SHORTLINE INDUSTRY GROWTH, 1990 – 2001



Source: Transport Canada

gateway to the US via Sault Ste. Marie. At present, CN has not decided whether to continue to maintain Algoma Central as a separate entity or absorb it into its own operations.

Another notable development was the bankruptcy of Iron Road, a holding company for a number of US and Canadian shortline railways, including Quebec Southern, Canadian American, Bangor and Aroostook, Northern Vermont and Windsor & Hantsport. Iron Road had been in financial difficulties for several years. Negotiations were under way in the fall of 2001 to sell most of the above properties to a consortium led by Rail World and were expected to close in early 2002. Windsor & Hantsport was not included in this arrangement, however, and negotiations were under way to sell this property separately.

The industry continues to restructure, although not as quickly as in recent years. As mentioned in the railway rationalization section of Chapter 9 of this report, RailAmerica's E&N shortline announced in late 2001 that it would be ceasing operations in the first quarter of 2002 due to a loss of forest products traffic, which represented

a significant proportion of its traffic base. It remains to be seen whether another operator will acquire E&N's property and effectively recycle its assets, as has occurred in a number of other cases.

## MAJOR COMPONENTS OF THE RAIL INDUSTRY

Although the number of railways operating in Canada more than doubled during the 1990s and the ownership and operation of the rail network changed dramatically, CN and CPR continued to generate the bulk of the revenues earned by the rail sector. For many years, these two carriers, which also account for the dominant portion of rail sector activity (as measured by gross tonne-kilometres), have generated about 90 per cent of industry revenues. The five regional railways (BC Rail, Algoma Central, Ontario Northland, Cartier Railway and the Quebec North Shore & Labrador) accounted for a further six per cent of industry revenues in 2001, while shortlines accounted for two per cent of revenues. Class III carriers (terminal and switching railways) and the small subsidiaries of US carriers generate the remaining industry revenues.

With respect to rail passenger services, the situation in 2001 remained unchanged from previous years, with VIA Rail dominating (carrying about 95 per cent of the intercity rail passengers and generating a similar proportion of the intercity passenger-kilometres). The balance of intercity rail passenger services offered in Canada is provided by BC Rail, Algoma Central and the Quebec North Shore & Labrador. Great Canadian Rail Tours provides a seasonal service between Vancouver, Calgary and Jasper, while Amtrak, the US passenger rail corporation, offers service to Montreal and Vancouver, in addition to Toronto (in cooperation with VIA Rail).

## TRUCKING INDUSTRY

### MAJOR EVENTS IN 2001

#### ***MOTOR VEHICLE TRANSPORT ACT AMENDMENTS***

On June 14, 2001,<sup>1</sup> Parliament passed and received Royal Assent for amendments to the *Motor Vehicle Transport Act*. The amendments deal primarily with motor

carrier (truck and bus) safety. They will enable the creation of a national safety and fitness compliance regime, based on the National Safety Code for Motor Carriers.

Provinces and territories are currently enacting the compliance regime at the provincial level. The amendments will come into force when the provincial regimes have achieved a reasonable level of uniformity, with the latter part of 2002 set as the target date for implementation.

### VEHICLE WEIGHTS AND DIMENSIONS

In August 2000, Ontario and Quebec announced an agreement to harmonize weight and dimension limits for specific vehicle types operating between the two provinces. The provisions of this agreement came into effect in early 2001. An agreement establishing uniform weight and dimension regulations in the four Atlantic Provinces — New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador — came into effect through legislative and/or regulatory amendments introduced in late 2001. Implementation of this agreement was accompanied by a transition plan for existing non-compliant vehicles that extends until December 2009. In mid-2001, Manitoba, Saskatchewan, Alberta and British Columbia completed consultations on an agreement to establish common permit conditions for movement of oversize and/or overweight loads.

### HOURS OF SERVICE REGULATIONS

Both Canada and the United States are reviewing changes to the regulations governing hours of work for commercial vehicle drivers. The House of Commons Standing Committee on Transportation and Government Operations (SCOTGO) has been invited by the Minister of Transport to examine the issue of hours of service and to look at the proposed changes.

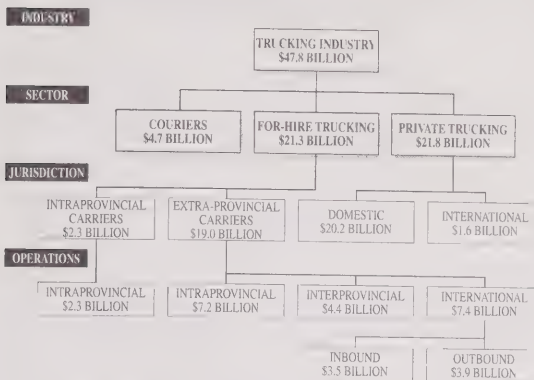
## STRUCTURE OF THE CANADIAN TRUCKING INDUSTRY

The trucking industry is an important player in Canada's transportation system. It includes for-hire carriers, private carriers, owner-operators and courier firms, and it generates an estimated \$47.8 billion in revenues in 2000. For-hire trucking firms alone account for more than 40 per cent of the Gross Domestic Product of the

1 49-50 Elizabeth II, Chapter 13, *Motor Vehicle Transport Act*.



FIGURE 10-2: TRUCKING INDUSTRY STRUCTURE AND REVENUES, 2000



Source: Statistics Canada, Special tabulations based on QMCF-Q4 Survey and Cat. 50-002; estimates for small carriers and private trucking by Transport Canada, "Canadian Courier Market Size, Structure and Fleet Analysis Study"; Infobase Marketing Inc., January 2001

whole transportation sector. There are approximately 256,000 heavy trucks<sup>2</sup> registered in Canada. It has been estimated that, weekly, more than 600,000 truck trips take place on the nation's major highways.<sup>3</sup>

There are a number of factors that can be used to differentiate trucking firms: the size of their fleet of trucks; the type of equipment they use; the geographic coverage of their operations; the type of services they offer; and the type of freight they carry.

Trucking operations can also be differentiated along jurisdictional lines. Intraprovincial trucking operations take place strictly within a province (or territory) and fall under provincial responsibility, while interprovincial activities are services offered from one province to another. International trucking services are offered from one province to another country.

Figure 10-2 shows the structure and revenues of the trucking industry.

**For-hire trucking firms** offer for compensation either truckload (TL) or less-than-truckload (LTL) services, or a mix of the two. For-hire trucking services can be further categorized according to the types of freight carried, such as general freight services, household goods services, liquid and dry bulk services, forest products services and specialized freight services.

**Private trucking services** are transportation services provided by a company that is transporting its own goods. Such private trucking activities are observed among retail distributors for consumer goods, chemical product

## NAFTA LAND TRANSPORTATION STANDARDS SUBCOMMITTEE OVERVIEW

The Land Transportation Standards Subcommittee (LTSS) was created by the North American Free Trade Agreement (NAFTA) to develop more compatible standards related to the safety and efficiency of truck, bus and rail operations, and the transport of hazardous materials in the United States, Mexico and Canada. The LTSS has been operating through its various working groups since 1994. Transport Canada hosted the eighth LTSS plenary session in Ottawa, October 15–17, 2001.

During 2001, the LTSS work progressed in the following areas:

### Vehicle and Drivers Standards (LTSS 1):

- Prepared a report on motor carrier safety supervision describing current and future efforts in each country.
- Developed a side-by-side comparison of motor carrier safety regulations among the three countries, and a generalized guide of safety regulations related to motor carrier operations and enforcement.
- Agreed to analyze key elements and differences that form part of the safety rating process in the three countries.

### Vehicle Weights and Dimensions (LTSS 2):

- Compiled information from the three countries to update an analysis of truck size and weight.

### Transport of Hazardous Materials (LTSS 5):

- Agreed on specifications for the construction of tanker trucks, to be included in the draft model standard for North America.
- Agreed to review and analyze the requirements for tanker trucks and include in the model standard the specifications for selection and use of tanker trucks according to the materials carried.

To address issues not specifically assigned to the LTSS by NAFTA, Canada, the United States and Mexico created the Transportation Consultative Group (TCG). The TCG (made up of five separate working groups) has been working in conjunction with the LTSS to address issues related to cross-border facilitation, rail operations, electronic data interchange, application and exchange of information on advanced technologies, and maritime and port policies.

producers, pulp and paper companies, beverage distributors, and wholesale distributors of agricultural products. A private fleet of trucks can be used not only for the carriage of a firm's own goods/products but also to haul goods for other firms if it has obtained all the proper operating authorities, which blurs the distinction between private and for-hire trucking activities.

**Owner-operators** are small independent operators who own or lease their own truck and haul trailers or other equipment for a carrier. Owner-operators can work directly for a shipper, for either private or for-hire carriers,

2 Trucks weighing over 10,000 kilograms.

3 Canadian Trucking Alliance.

and for one or more carriers. While some owner-operators are under long-term contracts to carriers, they also provide carriers with additional operational flexibility, which allows them to respond to peaks in demand for services.

Table 10-1 presents the number of owner-operators under contract by carrier type, as well as the revenues generated by their activities by province in 1999, the latest year for which such data is available. Just over one half of all owner-operators are based in either Ontario or Quebec.

**TABLE 10-1: NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIERS, 1999**

Province of Domicile	Number of Owner-Operators working for:				Operating Revenues (Millions of dollars)
	For-hire Carriers	Private Carriers	Both	Total	
Newfoundland	219	66	51	336	57.3
Prince Edward Island	99	39	15	153	34.4
Nova Scotia	434	248	60	742	136.5
New Brunswick	1,099	442	109	1,650	273.1
Quebec	5,639	1,165	237	7,041	1,204.9
Ontario	9,643	1,997	361	12,001	1,685.9
Manitoba	1,687	409	45	2,141	314.3
Saskatchewan	1,268	492	63	1,823	303.8
Alberta	3,939	1,860	248	6,047	1,067.5
British Columbia	3,304	1,689	212	5,205	810.2
Yukon	11	21	2	34	5.1
Northwest Territories	11	9	3	23	3.8
<b>Total Canada</b>	<b>27,353</b>	<b>8,437</b>	<b>1,406</b>	<b>37,196</b>	<b>5,896.8</b>

Note: 2000 data for small for-hire and owner-operators not available.

Source: Statistics Canada, *Surface and Marine Transport Bulletin*, Cat. 50-002, Special tabulation

**Courier services** include the delivery of all letters, envelopes, paks (plastic pouches designed to accommodate large documents or small parcels), boxes and cartons. In 2000, the courier industry generated total revenues of \$4.7 billion (estimated) on average volumes of two million packages per day. The courier industry is made up of two major segments:

- overnight or later delivery, where shipments are delivered at least one day following the day they are picked up; and
- same-day messenger delivery, where shipments are delivered the same day they are picked up.

## ALLIANCES, MERGERS AND ACQUISITIONS

A number of strategic alliances, mergers and acquisitions of motor carriers took place during 2001.

- **Clarke Inc.** acquired four small US-based freight management companies.
- Quebec-based **TransForce Inc.** acquired the majority of the assets of Daily Motor Freight Inc., thereby

## SEPTEMBER 11 EVENTS AND TRANSBORDER TRUCKING OPERATIONS

In the immediate aftermath of the events of September 11, 2001, border-crossing times for trucks increased dramatically due to increased security at Canada-US border crossing points. For shippers and carriers on both sides of the border, the delays had economic consequences, particularly in sectors like automobile assembly that are heavily dependent on just-in-time delivery production schedules.

Recognizing that land border controls must balance security concerns with the need for efficient and timely movement of goods and people, Canada and the United States signed the *Smart Border Declaration* on December 12, 2001. The declaration provides a framework for moving forward in four key areas: the secure flow of people; the secure flow of goods; secure infrastructure; and joint coordination and information sharing. The Declaration also contains initiatives that will expedite the secure and efficient movement of legitimate people and goods along North American trade corridors. The federal budget of December 10, 2001, allocated over \$1.2 billion over five years for measures to keep the border open, secure and efficient. This included a \$600 million program to improve border infrastructure, in addition to funding allocated for highway corridors in the 2000 federal budget.

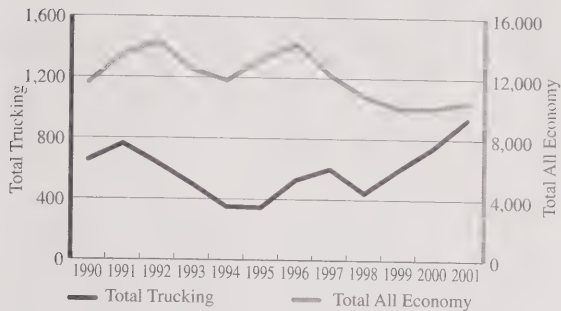
improving its position in the LTL sector in eastern Canada.

- **Cabano/Kingsway Transport Inc.** signed a strategic alliance with Ohio-based R&L Carriers that will enable Cabano Kingsway to expand its services and offer deliveries throughout the United States.
- A Canadian investment firm and senior executives of **Highland Transport** purchased the company, a subsidiary of Westminster Holdings. Highland has a fleet of 800 tractors and 1,200 vans providing truckload and container service in Ontario, Quebec, the Maritimes and the United States.

## BANKRUPTCIES

The number of bankruptcies in the trucking industry generally follows the pattern observed for the economy as a whole. As Figure 10-3 shows, the number of trucking bankruptcies dropped between 1991 and 1994, stabilized in 1995, then increased in 1996 and 1997. Following a decline in 1998, the number of bankruptcies has steadily increased in each of the last three years. In 2001, 932 bankruptcies were reported — the highest number in the last ten years.

Bankruptcies and other forms of exit from the industry generally reflect market adjustments to changes in the level of demand. Truck bankruptcies are observed mainly among small one- or two-truck operations and companies involved with activities ancillary to trucking services. The trucking industry has total annual revenues estimated at

**FIGURE 10-3: NUMBER OF BANKRUPTCIES, TRUCKING VERSUS TOTAL ECONOMY, 1990 – 2001**

Source: Industry Canada, Office of the Superintendent of Bankruptcy

\$48 billion. The total asset value of the trucking companies that had to declare bankruptcy was approximately \$100 million.

Table 10-2 shows annual trucking bankruptcies by region from 1990 to 2001.

**TABLE 10-2: ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1990 – 2001**

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia and Territories	Total Trucking	Total Economy
1990	57	142	147	213	97	656	11,642
1991	98	107	191	223	143	762	13,496
1992	70	119	188	171	88	636	14,317
1993	70	91	152	130	56	499	12,527
1994	37	67	88	125	33	350	11,810
1995	31	81	58	141	34	345	13,258
1996	74	90	107	197	59	527	14,229
1997	82	119	164	178	58	601	12,200
1998	39	71	121	158	54	443	10,791
1999	46	104	143	249	56	598	10,026
2000	61	133	203	303	44	744	10,055
2001	98	159	339	276	60	932	10,405

Note: Truck Transport industries include general freight, used goods moving and storage, bulk liquids, dry bulk materials, forest products and other truck transport industries.

Source: Industry Canada, Office of the Superintendent of Bankruptcy

## MARKET SEGMENT BY FREIGHT TRANSPORTED

Table 10-3 compares the revenues of large for-hire trucking firms by the type of freight carried. General freight carriers dominate the for-hire sector, accounting for 64 per cent of for-hire revenues in 2000.

**TABLE 10-3: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1998 – 2000**

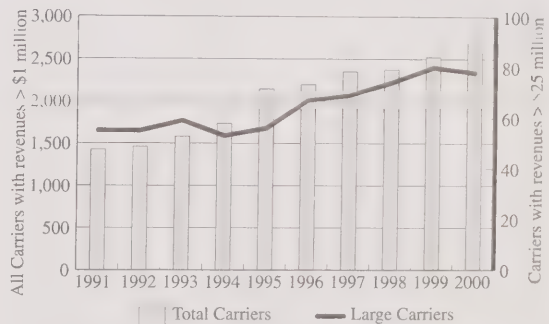
	Revenues (Millions of dollars)			Per cent of total		
	1998	1999	2000	1998	1999	2000
General Freight	8,902.0	10,064.4	11,260.2	59.8	62.2	64.0
Other Specialty Freight	2,648.5	2,618.3	2,806.5	17.8	16.2	15.9
Liquid Bulk	1,069.6	1,013.1	1,308.5	7.2	6.3	7.4
Dry Bulk	1,091.8	1,189.6	907.3	7.3	7.4	5.2
Forest Products	721.4	828.8	804.0	4.8	5.1	4.6
Household Movers	454.8	466.6	515.4	3.1	2.9	2.9
<b>Total</b>	<b>14,888.1</b>	<b>16,180.7</b>	<b>17,601.9</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: For-hire trucking firms with annual earnings of \$1 million or more.

Source: Statistics Canada, Annual Supplement (Q5) Survey, 1998–2000

## MARKET SEGMENT BY REVENUES

Figure 10-4 presents the number of for-hire carriers earning annual revenues of \$1 million or more between 1991 and 2000. Data for this period shows that the total number of for-hire carriers has increased steadily, though part of this increase is due to a new survey frame used by Statistics Canada since 1995 to conduct its trucking survey. The number of carriers in this category has almost doubled since 1991. The number of very large carriers, those with more than \$25 million in revenues, has fluctuated between 55 and 80 over this period.

**FIGURE 10-4: NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF \$1 MILLION OR MORE, 1991 – 2000**

Source: Statistics Canada, Annual For-Hire Carriers Survey, 1990–1993; Annual Supplement (Q5) and the Quarterly Motor Carriers of Freight Survey, 1994–2000

Table 10-4 shows total for-hire trucking revenues by size of carrier from 1991 to 2000, by revenue categories, including carriers that earn \$25 million or more annually; \$12 million to \$25 million; \$1 million to \$12 million; and less than \$1 million. Although total revenues have more than doubled since 1991, the proportion of revenues in each of the categories in 2000 has remained relatively stable.



**TABLE 10-4: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 2000**

Year	Medium Carriers (\$1 – 12 million)		Large Carriers (\$12 – 25 million)		Top Carriers (Over \$25 million)		Small Carriers (Less than \$1 million)		Grand Total Revenue (millions of dollars)
	Revenue (millions of dollars)	Share (per cent of total)	Revenue (millions of dollars)	Share (per cent of total)	Revenue (millions of dollars)	Share (per cent of total)	Revenue (millions of dollars)	Share (per cent of total)	
1991	4,028.8	40.3	1,107.6	11.1	3,298.2	33.0	1,562.4	15.6	9,997.0
1992	4,217.4	41.8	1,072.2	10.6	3,256.1	32.3	1,537.3	15.2	10,082.9
1993	4,542.9	41.0	1,268.0	11.4	3,411.1	30.8	1,868.2	16.8	11,090.2
1994	5,212.8	40.4	2,208.5	17.1	3,541.4	27.5	1,929.9	15.0	12,892.6
1995	5,460.6	38.3	3,090.0	21.7	3,576.9	25.1	2,113.4	14.8	14,240.9
1996	5,731.8	37.6	3,453.2	22.7	3,917.7	25.7	2,127.1	14.0	15,229.8
1997	6,530.4	40.1	3,553.1	21.8	4,187.7	25.7	2,017.0	12.4	16,288.2
1998	6,591.6	36.8	3,280.5	18.3	5,015.9	28.0	3,017.5	16.9	17,905.5
1999	7,429.7	39.9	3,248.2	17.4	5,502.8	29.5	2,447.4	13.1	18,628.1
2000	7,944.5	39.2	3,376.5	16.7	6,280.9	31.0	2,670.0	13.2	20,271.9

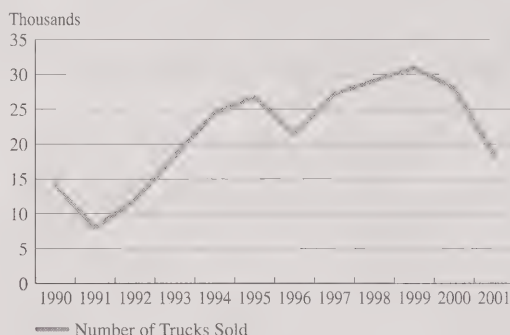
Note: Including motor for-hire carriers of freight earning annual revenues of \$30,000 or more.

Source: Transport Canada based on Statistics Canada, *Annual Motor Carriers of Freight Survey (AMCF) 1990-93; Annual Supplement (Q5) to the Quarterly Motor Carriers of Freight Survey (QMCF) 1994-2000*; 2000 small carriers' revenues estimated by Transport Canada; revised 1999 data for small for-hire

## EQUIPMENT SALES

The economic slowdown experienced in both Canada and the United States in 2001 has an impact on the number of new trucks purchased during the year. Sales of new Class 8 trucks<sup>4</sup> totalled 18,361 in 2001, 34 per cent fewer than in 2000 and 43 per cent fewer than the record sale level of 30,984 in 1999. Sales volumes were down in every province, with the largest decreases observed in British Columbia, Ontario and New Brunswick. Table 10-5 presents the number of Class 8 trucks sold by province from 1999 to 2001, while Figure 10-5 shows the number of Class 8 trucks sold across Canada from 1990 to 2001.

**FIGURE 10-5: ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 2001**



Source: Canadian Vehicle Manufacturers' Association

**TABLE 10-5: SALE OF CLASS 8 TRUCKS BY PROVINCE, 1999 TO 2001**

	1999 Sales	Per cent of total	2000 Sales	Per cent of total	2001 Sales	Per cent of total
Newfoundland	150	0.5	110	0.4	70	0.4
Prince Edward Island	45	0.1	46	0.2	41	0.2
Nova Scotia	632	2.0	543	1.9	312	1.7
New Brunswick	1,437	4.6	1,142	4.1	701	3.8
Quebec	6,782	21.9	5,749	20.6	3,897	21.2
Ontario	13,124	42.4	11,163	40.0	6,557	35.7
Manitoba	1,674	5.4	1,224	4.4	990	5.4
Saskatchewan	1,107	3.6	1,024	3.7	752	4.1
Alberta	3,814	12.3	4,345	15.6	3,545	19.3
British Columbia	2,219	7.2	2,559	9.2	1,496	8.1
<b>Canada</b>	<b>30,984</b>	<b>100.0</b>	<b>27,905</b>	<b>100.0</b>	<b>18,361</b>	<b>100.0</b>

Source: Canadian Vehicle Manufacturers' Association

4 Trucks with a gross vehicle weight exceeding 15,000 kilograms.

## BUS INDUSTRY

### MAJOR BUS EVENTS IN 2001

#### LEGISLATIVE AND REGULATORY CHANGES

##### *Motor Vehicle Transport Act, 1987 Review*

The June 2001 amendments to the *Motor Vehicle Transport Act* primarily dealt with the regulation of carrier safety for both truck and bus operators. The provincially administered motor carrier safety fitness regime required under these amendments will apply to extraprovincial bus operators, effectively capturing most of the Canadian intercity and charter bus sectors. The amendments are expected to come into force during 2002. When they do come into force, carriers will receive a safety fitness certificate and a safety rating. The safety rating will be based on the carrier's record of safety compliance. Carriers with a poor record will be subject to sanctions; in extreme cases, these could include the removal of the right to operate.

This safety regime is an *addition* to the economic controls (i.e. entry, tariff, route and exit controls) in jurisdictions that still maintain economic regulation of the bus industry.

On the economic regulatory front, the intercity and charter bus industries are subject to significant economic controls in five provinces; British Columbia, Saskatchewan, Manitoba, Quebec and Nova Scotia; to lighter economic controls in three provinces and one territory; Alberta, Ontario, New Brunswick and the Yukon; and are deregulated in two provinces and two territories; Prince Edward Island, Newfoundland, Northwest Territories and Nunavut. These jurisdictional regulatory regimes apply also to extraprovincial operators under the provisions of the *Motor Vehicle Transport Act*, which were unaffected by the 2001 amendments.

In May 2001, the Minister asked the Senate Committee on Transport and Communications to examine the issues facing the Canadian bus industry, including the impact of the fragmented regulatory situation. The Committee has until December 2002 to conduct the investigation and submit a report.

#### INDUSTRY EVENTS – 2001

After significant losses in two consecutive years, Laidlaw filed voluntary petitions for bankruptcy protection in both Canada and the United States, in June 2001. The company wanted to reassure the public that this would not

affect its intercity bus operations (in Canada, Greyhound Canada Transportation Corporation and related companies). At year's end, Laidlaw was still in the process of restructuring under bankruptcy protection in both countries.

### INDUSTRY STRUCTURE

The Canadian bus industry is made up of approximately 1,000 operators that collectively move more than 1.5 billion passengers each year. In 2000, the industry generated more than \$6.2 billion in total revenues, including subsidies.

There are two main ways of categorizing the bus industry: by type of establishment (i.e. principal company activity) and by the type of bus service provided.

#### REVENUE BY TYPE OF ESTABLISHMENT

Transit is by far the largest of the sector subdivisions, both as service line and as type of establishment. Moreover, transit establishments are typically dedicated to transit operations, with only a fraction of their revenues coming from the other service lines. All major Canadian cities have some form of urban transit services. Excluding subsidies, transit companies accounted for half of total bus industry revenues in 2000. Urban transit services are subsidized by both municipal and provincial governments and transit revenues and subsidies combined account for 68 per cent of total bus revenues. Some transit operators also offer school bus, charter services and accessible services to those travellers with disabilities.

Among the other carriers, however, the situation is very different. Almost all operators, regardless of their primary business, provide at least some charter service. Many operators provide some intercity and school bus services. Charter bus services are generally characterized by the rental of a bus to a person or group where all passengers embark and disembark at the same point. The charter operators have the flexibility to offer a broad range of services (e.g. half-day school trips, three-week excursions, one-way trips, local sightseeing tours).

Scheduled intercity bus service can be defined as a regular scheduled service between two or more urban areas, i.e. operated over a fixed route with a limited number of stops.

Scheduled intercity bus services are offered in all Canadian provinces and territories with the exception of the Nunavut territory. The Canadian scheduled bus industry provides essentially regional services. There is

one national network operated by the Laidlaw companies (Greyhound, Grey Goose, Voyageur Colonial, and several others) offering services from Montreal and Southern Ontario to the Pacific Coast, and significant local/regional service in Ontario, Manitoba, Alberta and British Columbia as well as services to the United States.

Direct competition between bus carriers is currently limited to the Edmonton – Calgary – Fort McMurray corridor (Greyhound and Red Arrow) and routes in Southern Ontario, particularly around Toronto and on the Toronto – Niagara corridor (Greyhound, Trentway, PMCL, Ontario Northland).

**TABLE 10-6: CANADIAN SCHEDULED CARRIERS AND MARKETS SERVED, 2000**

<i>Carrier/Carrier Group</i>	<i>Markets Served</i>
Laidlaw Carriers	
Greyhound	Ontario West; local service in British Columbia, Alberta and Ontario; International service
Grey Goose	Manitoba and Northwestern Ontario
Voyageur Colonial	Ottawa–Montreal; Eastern Ontario
Penetang-Midland Coach Lines	Toronto–Barrie–Collingwood (Ontario)
Island Coach Lines	Vancouver Island (British Columbia)
Red Arrow (Pacific Western)	Calgary–Edmonton–Fort McMurray (Alberta)
Saskatchewan Transportation	Saskatchewan
Ontario Northland	Toronto–North Bay–Sudbury–Timmins (Ontario)
Trentway-Wagar (Coach USA)	Niagara–Toronto–Montreal (Ontario and Quebec)
Orleans Express	Montreal–Quebec City–Gaspé (Quebec)
Les Autobus Maheux	Montreal–Abitibi/Témiscamingue (Quebec)
Sherbus <sup>1</sup>	Montreal–Estrie (Quebec)
Intercar	Quebec City–Saguenay–Lac St-Jean (Quebec)
SMT/Acadian	Maritime Provinces
DRL	Nova Scotia and Newfoundland

Note: The table is intended to be representative of the service available in each province/region, and is not a complete list of services.

<sup>1</sup> During the summer of 2001, Sherbus was acquired by Autocar National.

Source: *Official Canadian Bus Guide, November/December 2000*

## REVENUES BY SERVICE LINES

For the non-transit establishments, service line revenues are the most reliable way of tracking trends in industry activity. In 2000, total revenues (excluding urban transit) were \$2 billion. School bus revenues accounted for almost half of this (\$965 million), while scheduled and charter service revenues (\$719 million) accounted for one third.

The revenue breakdown by service line shows better than any other indicator the cross-sector relationships in

the bus industry. The school bus sector, for example, is not only far bigger than any of the others, but also the largest single provider of scheduled service (\$164 million).

Generally, the service line approach also gives the best indication of the relative growth or decline of scheduled and charter services. Overall, the industry grew from \$5.2 billion in 1995 to \$6.2 billion in 2000, an average annual growth rate of 3.5 per cent. However, this growth was unevenly distributed among the service lines, averaging about two per cent in scheduled and school bus services, 5.7 per cent for transit, and 8.2 per cent for charter and tour services, the best performance of any of the service lines.

Table 10-7 shows the industry data for 2000 arranged by both type of establishment and service line.

**TABLE 10-7: SUMMARY OF REVENUES BY SOURCES OF REVENUE, 2000**

	<i>Intercity bus operators</i>	<i>Charter<sup>1</sup> bus operators</i>	<i>School bus operators</i>	<i>Urban transit operators</i>	<i>Total</i>
<b>Number of establishments<sup>2</sup></b>	<b>27</b>	<b>156</b>	<b>718</b>	<b>67</b>	<b>968</b>
<b>Sources of revenues</b>	(Millions of dollars)				
Scheduled intercity services	72.8	34.0	163.7	0.0	270.5
Charters, sightseeing and shuttle services	14.8	251.4	178.0	4.8	449.0
School bus transportation	2.5	21.0	939.2	1.8	964.5
Urban transit services	5.4	15.4	46.9	1,888.5	1,956.2
Other passenger/operating revenues	10.9	54.1	54.7	105.1	224.8
Parcels express delivery	16.7	2.2	76.8	0.0	95.7
<b>Total (excluding subsidies)</b>	<b>123.2</b>	<b>378.2</b>	<b>1,459.3</b>	<b>2,000.1</b>	<b>3,960.8</b>
<b>Subsidies<sup>3</sup></b>	<b>4.4</b>	<b>0.3</b>	<b>0.3</b>	<b>2,265.6</b>	<b>2,270.6</b>
<b>Total</b>	<b>127.6</b>	<b>378.4</b>	<b>1,459.6</b>	<b>4,265.7</b>	<b>6,231.4</b>

<sup>1</sup> Consists of charter, shuttle and sightseeing operators.

<sup>2</sup> Includes bus operators with annual revenues greater than \$200,000.

<sup>3</sup> Includes operating and capital subsidies for urban transit operators.

Source: *Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215*

The Canadian bus industry experienced an overall 9.2 per cent increase in revenues (excluding urban transit subsidies) in 2000. Within different sectors, revenue reporting is subject to variations. These variations have been caused, in large part, by consolidated financial reporting resulting from mergers and acquisitions as well as the shift to the North American Industry Classification System (NAICS)<sup>5</sup> by Statistics Canada.

<sup>5</sup> Following the 1995 North American Free Trade Agreement, Canada, the United States and Mexico developed the North American Industry Classification System (NAICS) to replace the Standard Industrial Classification (SIC) system. NAICS covers the following bus industries: urban transit systems; interurban and rural bus transportation; school bus transportation; charter bus industry; shuttle services; and scenic and sightseeing transportation by bus.



Table 10-8 tracks data for both establishments and service lines over a five-year period.

**TABLE 10-8: TOTAL REVENUES BY INDUSTRY SECTOR AND TYPE OF SERVICES, 1996 – 2000**

Type of Operators	(Millions of dollars)					Per cent change 1996 – 2000
	1996	1997	1998	1999	2000	
Scheduled intercity operators <sup>1</sup>	314.3	301.2	128.9	106.2	123.2	(60.8)
Charter, sightseeing and shuttle	301.4	289.5	339.8	333.5	378.2	25.5
School bus operators	1,032.2	1,023.0	1,286.6	1,332.8	1,459.3	41.4
Urban transit operators	1,621.4	1,712.3	1,743.8	1,854.7	2,000.1	23.4
<b>Total (Excluding subsidies)</b>	<b>3,269.3</b>	<b>3,326.0</b>	<b>3,499.1</b>	<b>3,627.2</b>	<b>3,960.8</b>	<b>21.2</b>
Subsidies	2,056.2	2,137.1	2,386.2	2,562.2	2,270.6	10.4
<b>Total Revenues</b>	<b>5,325.5</b>	<b>5,463.1</b>	<b>5,885.3</b>	<b>6,189.5</b>	<b>6,231.4</b>	<b>17.0</b>
<b>Type of Services</b>						
Scheduled intercity services	247.9	241.3	240.1	235.8	270.5	9.1
Charters, sightseeing and shuttle services	334.2	316.4	368.7	352.4	449.1	34.4
School bus services	832.2	825.7	893.5	915.3	964.5	15.9
Urban transit services	1,574.1	1,672.2	1,694.0	1,817.0	1,956.2	24.3
Other passenger/operating revenues	196.3	191.2	216.2	218.5	224.7	14.5
Parcels express delivery	84.6	79.4	86.6	88.2	95.8	13.2
<b>Total (Excluding subsidies)</b>	<b>3,269.3</b>	<b>3,326.0</b>	<b>3,499.1</b>	<b>3,627.2</b>	<b>3,960.8</b>	<b>21.2</b>
Subsidies	2,056.2	2,137.1	2,386.2	2,562.2	2,270.6	10.4
<b>Total Revenues</b>	<b>5,325.5</b>	<b>5,463.1</b>	<b>5,885.3</b>	<b>6,189.5</b>	<b>6,231.4</b>	<b>17.0</b>

<sup>1</sup> Starting in 1998, some scheduled intercity carriers have been recorded under school bus operators due to consolidated financial reporting coming from mergers and acquisitions

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215; special tabulations based on NAICS and Canadian Urban Transit Association (CUTA)

## CORPORATE STRUCTURE

The corporate structure of the industry reflects the complex mix of services it provides. The largest carrier group in Canada and in the United States is Laidlaw Inc., based in Burlington, Ontario. Through its ownership of Greyhound and a number of smaller carriers, it is the largest scheduled intercity operator in both countries. It is also the largest school bus operator in both countries and, in the United States, has a presence in the transit sector.

Although it has a smaller presence in Canada than Laidlaw, the United Kingdom-based Stagecoach PLC is also a major player. It operates in both Canada and the United States through Coach Canada and Coach USA. In the United States, it is the largest charter operator. In Canada, although also a charter operator, Stagecoach PLC has a significant presence in the scheduled intercity market in central Canada.

A third large carrier group is Calgary-based Pacific Western, which has a significant presence in the charter,

scheduled intercity, shuttle and transit markets in Ontario, British Columbia and Alberta.

Although most of the other players in the Canadian market are far smaller than these three, few are exclusively dedicated to one type of bus service.

## MARINE TRANSPORTATION INDUSTRY

Canada's marine industry is made up of a fleet of Canadian flag operators that provide domestic and transborder shipping services, while foreign-flag operators calling at Canada's major ports, provide services for overseas international trade. There have been major policy reforms in the marine sector in recent years. Once again, 2001 was marked by a number of important events and progress on some significant legislative changes.

## MAJOR MARINE EVENTS IN 2001

### LEGISLATIVE AND REGULATORY CHANGES AND INITIATIVES

#### *Marine Liability Act*

In January 2001, the government introduced a new *Marine Liability Act* (MLA) in the Senate as Bill S-2. Bill S-2 moved successfully through Parliament, received Royal Assent on May 10, 2001, and came into force on August 8, 2001. The new *Marine Liability Act* is now implemented in Chapter 6 of the *Statutes of Canada, 2001*.

This legislation adopts a new regime of shipowners' liability to passengers and a new regime for apportioning liability. It also consolidates existing marine liability regimes into a single Act. The new Act enables passengers to seek compensation for damages suffered while travelling by ship.

New Marine Liability Regulations are now being developed to deal with liability for oil pollution damage and for passengers carried by water.

#### *Canada Shipping Act (CSA), 2001*

At the top of the list of legislative accomplishments was Royal Assent on November 1, 2001 of Bill C-14, the *Canada Shipping Act, 2001*.

The CSA is one of the oldest pieces of legislation still in effect in Canada - it is also the principal legislation

governing the operation of Canadian vessels, as well as the operation of foreign vessels in waters under Canada's jurisdiction.

The overhaul of the CSA began in 1996 and its final product, the CSA 2001, is the result of extensive consultations with a wide range of marine stakeholders. The new Act is a reorganized, updated and streamlined piece of legislation that represents the government's commitment to modernize shipping legislation and promote the economic growth of the shipping industry.

Although the CSA 2001 has received Royal Assent the coming into force date will not take place until the supporting regulatory framework is in place. Among other things, the new Act simplifies the legislative framework, removing technical detail that is better placed in regulations, standards or other documents. Consultations with stakeholders are currently taking place to ensure that the new regulations contribute to the economic performance of the marine industry while maintaining safety as a priority and protecting the marine environment.

### **Amendments to the *Shipping Conferences Exemption Act***

A shipping conference is an association of liner companies operating under an agreement to provide ocean transportation services on common routes and using common rates and terms of service. The *Shipping Conferences Exemption Act* (SCEA) exempts certain shipping conference practices from the provisions of the *Competition Act*. Following an extensive review of SCEA, Bill C-14 received Royal Assent on November 1, 2001. The Bill contained amendments to SCEA that inject greater competition into liner shipping conference operations. The amendments support Canada's goals of promoting international trade and ensuring that Canadian shippers have access to adequate international ocean shipping services at a reasonable cost. The amendments also keep Canada's shipping conference legislation in balance with major trading partners, in particular the United States.

## **INDUSTRY EVENTS**

### **International**

- The Korean carrier Cho Yang declared bankruptcy in mid-2001. Two alliances have reshuffled their memberships as a result. Cho Yang's former partners — Hanjin and Senator Lines — have now joined COSCO, K-Line and Yang Ming in a new alliance.
- In October 2001, Tropical Shipping Ltd. acquired Kent

Line's weekly container service from Saint John to the Caribbean and South America. Kent Line will concentrate on its breakbulk transport services in the future.

- Concentration in the international liner industry continued to increase, with the top 20 carriers controlling 83 per cent of the world's cellular fleet in 2001, compared with 70 per cent in 1998 (*Containerization International*). CP Ships now ranks as the tenth largest liner operator in the world.
- CP Ships was spun off in 2001 by its parent company to become a separately traded public company at the end of September 2001.
- CP Ships and Canadian Pacific Railway Ltd. (CPR) (also now a separate company) announced a long-term agreement, extending to 2014, under which CPR will continue as CP Ships' exclusive rail carrier in the Port of Montreal.
- On the west coast route to Australia/New Zealand, Columbus Line, P&O Nedlloyd, FESCO and ANZDL implemented a new vessel-sharing agreement in 2001. Their service includes a call at Vancouver.
- Another new joint service was also established on the West Coast in 2001. Lykes Line, Columbus, Maruba and TMM are now operating a joint service from the west coast of North America to Mexico and the west coast of South America. This service now includes service to the Far East as well.

### **Domestic**

- Upper Lakes Group (an operator of traditional self-propelled tonnage) has formed a joint venture with McAsphalt Industries Ltd. to construct and operate a new barge/tug unit to carry heavy oils and asphalt products on the Great Lakes and the St. Lawrence River, and along the East Coast.
- Canada Steamship Lines purchased the assets of Parrish & Heimbecker's Shipping Division, which included the vessels *Oakglen* and *Mapleglen*. The company will use these two bulkers in the conventional grain and iron ore trades on the Great Lakes.
- During 2001, Algoma Tankers sold off the *Algoscotia*, formerly part of the Imperial Oil fleet, because of the requirement for double-hulled protection on ships carrying petroleum products.
- Water levels on the Great Lakes remained low again in 2001, particularly for Lake Michigan and Lake Huron, forcing vessel operators to reduce their loads. These reductions affected operators' profits because costs remained the same but revenues per load (based on tonnage carried) were reduced.

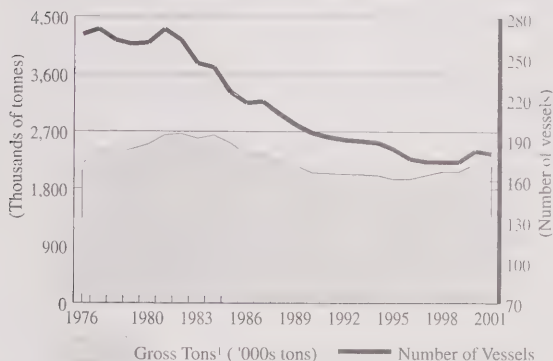
## MARINE FREIGHT TRANSPORT SERVICES

### DOMESTIC SERVICES

Over the last 25 years (1976 – 2001), the Canadian merchant fleet (defined here as self-propelled vessels of 1000 gross tons and over flying the Canadian flag) has faced many economic and financial difficulties. After its 1981 peak of 271 vessels and a combined loading capacity of 2.7 million gross tons,<sup>6</sup> the Canadian merchant fleet experienced a slow decline to a low of 174 vessels and two million gross tons (carrying capacity) in 1997. Carrying capacity started a recovery process in 1998, with 180 vessels and over 2.3 million gross tons by the end of 2001.

Figure 10-6 illustrates the evolution of the Canadian registered fleet from 1976 to 2001.

**FIGURE 10-6: CANADIAN REGISTERED FLEET, 1976 – 2001**  
(Ships of 1,000 gross tons and over)



1 Gross Ton is the capacity in cubic feet of the spaces within the hull, and of the enclosed spaces above the deck available for cargo, stores, fuel, passengers and crew, divided by 100. One gross ton = 100 cubic feet.

Source: Canadian Transportation Agency and Transport Canada

Although dry bulk carriers registered a declining share in terms of gross tons and number of vessels from 1981 to 2001, they remain the backbone of the Canadian merchant fleet, accounting for 55 per cent of tonnage and 39 per cent of vessels in 2001. Dry bulk carriers totalled 71 vessels in 2001, composed of straight-deck bulkers dedicated mainly to grain transportation and self-unloaders carrying various bulk commodities. While tankers' share rose from 11 to 21 per cent of total gross tonnage thanks to the addition of larger units, their number fell from 41 to 22 vessels over this period.

An extensive fleet of tugs and barges also operates both domestic and international services. In 2001, the Canadian Transportation Agency estimated that the Canadian fleet of tugs and barges was made up of 334 tugs (115,000 gross tons) and 1,245 barges and scows totalling nearly 1.2 million gross tons of capacity.

Table 10-9 shows the transport capacity of the Canadian registered fleet by type of vessel from 1981 to 2001.

**TABLE 10-9: CANADIAN REGISTERED FLEET BY TYPE, 1981 – 2001**

Type of Carriers	Gross Tons ('000s tons)			Number of Vessels		
	1981	1991	2001	1981	1991	2001
Dry Bulk	1,913	1,384	1,266	131	80	71
Tankers	282	248	479	41	33	22
General cargo	125	81	186	30	15	25
Ferries	251	295	339	56	56	56
Other	73	36	35	13	8	6
<b>Total</b>	<b>2,643</b>	<b>2,044</b>	<b>2,305</b>	<b>271</b>	<b>192</b>	<b>180</b>

Note: Fleet includes self-propelled vessels of 1,000 gross tons and over

Source: Canadian Transportation Agency and Transport Canada

### Eastern Canada

Table 10-10 provides information on vessel type, gross registered tonnage (GRT), area of operation and type of service for companies operating Canadian-flag cargo vessels of 1,000 GRT or over in eastern Canada. Algoma Central Corporation, Upper Lakes Group, and Canada Steamship Lines are the three largest operators in this area. Algoma Central Corporation, with 27 per cent of eastern Canada's fleet capacity, is the largest inland shipping company in Canada.

Consolidation continued in the domestic Great Lakes fleet during 2001, with Canada Steamship Lines (CSL) acquiring the shipping division of Parrish & Heimbecker (P&H), including its two straight-deck bulk carriers.

### Western Canada

A large tug and barge fleet provides domestic marine cargo services on the west coast. Most of the operators in this fleet concentrate on the domestic trades, but some also trade internationally between Canadian and US ports. A significant fleet of ferry vessels also provides links to coastal and island communities.

The Washington Marine Group, owned by Montana businessman Dennis Washington, controls several of the largest tug and barge operations, including

6 Gross tonnage is the capacity in cubic feet of the spaces within the hull and of the enclosed spaces above the deck of a vessel, divided by 100. The 100 cubic feet of capacity is equivalent to one gross ton. However, capacity of a cargo carrying ship can also be expressed as deadweight in tonnes (1000 kg) required to immerse the hull at a particular draught (usually the maximum summer draught).



Seaspan International Ltd., Cates Tugs, Norsk, and Kingcome Navigation Company (formerly owned by MacMillan Bloedel). Seaspan International Ltd., the largest Canadian tug and barge operator on the west coast, focuses on tug and barge transportation, log barging and ship docking.

In 2000, a Canadian subsidiary of Rotterdam-based Smit International acquired Rivtow Marine Ltd., the second-ranked tugboat company in British Columbia. The acquisition included Tiger Tugz Inc., Rivtow's wholly owned subsidiary, and Rivtow's interest in Westminster Tug Boats Inc.

### **Northern Canada**

#### ***Western Arctic***

Northern Transportation Company Limited (NTCL) is the principal marine operator in northern Canada. Its operations cover the Mackenzie River, the western Arctic, Alaska and Great Slave Lake, and include bulk petroleum products and dry cargo for communities, defence installations, and gas exploration sites across the North. NTCL also provides tug and barge operations from the Port of Churchill to service communities in what is now called the Kivalliq region of Nunavut.

NTCL operates an Eastern Arctic Sealift Marshalling and Packaging Service out of Montreal through its subsidiary, NorTran Inc. In addition, the company further expanded its eastern Arctic operations in 1996, when it secured a contract to resupply fuel to Baffin communities using chartered foreign ice-strengthened tankers. It is also currently a partner in the N3 Alliance, to which the Nunavut government awarded a two-year contract to coordinate the Eastern Arctic Sealift.

NTCL is a member of the NorTerra group of companies, a 100-per cent Aboriginally owned holding company. NorTerra is managed and owned equally by Inuvialuit Development Corporation, representing the Inuvialuit of the Western Arctic, and Nunasi Corporation, representing the Inuit of Nunavut.

Other long-term operators in the western Arctic include A. Frame Contracting Ltd. and Cooper Barging Service Ltd. A. Frame Contracting Ltd. operates a tug and several barges and provides seasonal barge services to communities on Lake Athabasca. Cooper Barging Service Ltd. provides resupply services on the Mackenzie and Liard Rivers from its base at Fort Simpson. During 2001, Cooper took delivery of three new barges that were built in China.

#### ***Eastern Arctic***

At the end of the 2000 shipping season, the Canadian Coast Guard transferred responsibility for the Arctic Sealift Operations to the Government of Nunavut. The Government of Nunavut awarded a two-year contract to the N3 Alliance to continue the Sealift, including three key services: administration of the Eastern Arctic Sealift, Marshalling and Packaging Services, and Marine Transportation of Goods.

The N3 Alliance is a joint venture between Northern Transportation Company Limited, Nortran Inc. and Nunavut Sealink and Supply Inc. (NSSI). Arctic Co-operatives Limited holds 60 per cent of the shares of NSSI, while Transport Desgagnés Inc. holds 40 per cent.

Although the Sealift contract is with the Government of Nunavut, any person or company can use the service and enjoy the same rates and services. The published resupply schedule for 2001 showed four vessels performing Arctic Sealift Operations: *Mathilda Desgagnés*, *Anna Desgagnés*, *Cécilia Desgagnés* and *Jacques Desgagnés*.

In addition, the Quebec Ministry of Transportation also manages resupply services to the Nunavik Region, while the James and Hudson Bay Cree receive supplies out of Moosenee (from cargo originating in the Toronto region).

Mines such as Polaris and Nanisivik also have vessels bringing supplies in to their operations, and carrying zinc and lead concentrates out to world markets. Fednav, the owner of the *MV Arctic*, is active in these operations.

### **INTERNATIONAL SERVICES**

Liner and bulk shipping constitute the main parts of international marine freight transport.

#### **Bulk Shipping**

Bulk shipping generally refers to the sector of the marine freight industry that carries single cargoes in large volume ships. Canadian shippers of bulk commodities rely on bulk shipping operators to move their export cargo, including grain, coal, iron ore and potash.

Competition in the global open market sets bulk freight rates. The global market generally consists of time charters (term contracts) and the "spot" or "tramp" market, which consists of short-term contracts covering a specified number of voyages, days or given quantity of cargo. Spot prices are set in open markets and exchanges, and prices vary according to supply and demand factors, such as vessel size, equipment, trade route and timeliness of the service requirement.

The terms of charter contracts typically range from one to five years, depending on price volatility. Longer contracts are common during periods of greater predictability in transportation rates, while shorter contracts usually prevail when prices are unstable. The majority of Canada's bulk exports and imports are moved under these types of arrangements on foreign-flagged

vessels. Canadian-registered ships transport the majority of domestic shipments of bulk materials on the Great Lakes and along the coastline of Canada.

Table 10-10 provides information on vessel type, gross registered tonnage (GRT), area of operation and type of service for companies operating Canadian-flag cargo vessels of 1,000 GRT or over in Eastern Canada.

**TABLE 10-10: EAST COAST CANADIAN-FLAG CARGO FLEET — SELF-PROPELLED VESSELS 1,000 GRT AND OVER, 2001**

<i>Companies</i>	<i>Type</i>	<i>Number of vessels</i>	<i>GRT</i>	<i>Area of Operation</i>	<i>Type of Service</i>
Algoma Central Corp.	Bulker	9		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk, liquid bulk
	Self-Unloader	14		Great Lakes/St. Lawrence/East Coast Canada	
	Tanker	3		Great Lakes/Gulf of St. Lawrence/ East Coast Canada	Dry bulk
	Total	26	456,921		
Black Creek Shipping Co. (See Lower Lakes also)	Self-Unloader	1	10,532	Great Lakes/St. Lawrence	Dry bulk
Canada Steamship Lines	Bulker	3		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk
	Self-Unloader	11		Great Lakes/St. Lawrence/East Coast Canada	
	Total	14	307,073		
Canship Ltd.	Other	1	1,714	East Coast	
Coastal Shipping Ltd.	Tanker	1	3,015		
C.A. Crosbie Shipping	Other	2	5,301	Canadian Arctic/East Coast Canada/Atlantic Basin	Container, breakbulk, Ro-Ro
Enerchem Transport Inc.	Tanker	2	14,805	See Algoma	Liquid bulk
ESSROC Canada	Other	1	6,792	Great Lakes	Cement
Fednav Ltd.	Bulker	1	20,236	Canadian Arctic from May to November	Dry/liquid bulk
Gravel & Lake Services Ltd. Groupe Desgagnés	Other	1	3,536		
	Tanker	3		Great Lakes/St. Lawrence/ Arctic/Overseas	Container/breakbulk/ dry bulk/grain
	Other	5			
	Total	8	45,317		
Imperial Oil	Tanker	1	1,192	Great Lakes	Liquid bulk
Irving/Kent Line	Tanker	3	51,091	Maritimes	Liquid bulk
LaFarge Canada	Other	1	6,729	Great Lakes	Cement
McKeil Marine	Tanker	2			
	Other	1			
	Total	3	14,573		
Mobil Oil, Chevron, Murphy Oil Corp. Partnership	Tanker	1	76,216	Maritimes	Liquid bulk
Oceanex Inc.	Other	3	41,157	St. Lawrence/East Coast Canada	Container, trailer, Ro-Ro, breakbulk
N.M. Paterson & Sons	Bulker	7	113,814	Great Lakes/St. Lawrence	Dry bulk, grain
Penney Ugland Inc.	Tanker	1	76,216	Maritimes	Liquid bulk
Pierre Gagne Contracting	Self-Unloader	1	20,148	Great Lakes/St. Lawrence	Dry bulk
Provmar Fuels Inc.	Tanker	2	5,949		Liquid bulk
Purvis Marine	Other	1	3,280		
Rigel Shipping Canada Inc.	Tanker	3	18,786	St. Lawrence	Liquid bulk
Shell Canada	Tanker	1	2,758	St. Lawrence	Liquid bulk
Transport Nanuk	Other	1	7,392	Arctic ports/St. Lawrence/International	Heavy lift, Ro-Ro, general, Lo-Lo
Upper Lakes Group	Bulker	13		Great Lakes/St. Lawrence	Dry bulk, grain
	Self-Unloader	8			
	Total	21	390,556		
<b>Grand Total</b>		<b>108</b>	<b>1,705,099</b>		

Note: GRT = Gross Registered Tonnage; Ro-Ro = Roll on, Roll off cargo; Lo-Lo = Lift on, Lift off cargo.

Source: Lloyd's Register of Ships and Transport Canada data

## Liner Shipping

Offered according to published schedules and on specific trade routes with fixed itineraries, liner services handle higher-value containerized cargoes, such as electronics, manufactured goods or frozen produce.

Large fleets of specialized container vessels operating on major trade routes around the world dominate the international liner trade. To a large degree, Pacific Rim and Western European interests prevail. CP Ships controls a significant fleet that ranks tenth in the world based on vessel capacity and number of ships.<sup>7</sup> CP Ships acquired much of its fleet by purchasing foreign shipping lines. The vast majority of vessels in the Canadian-controlled international fleet operate under foreign flags and employ foreign officers and crew.

Shipping lines calling at Canadian ports may choose to provide conference or non-conference liner services. Ocean carriers providing liner services on a common trade route often elect to form a shipping conference and collectively agree on rates and/or conditions of service. Under the *Shipping Conferences Exemption Act* (SCEA), a group of lines are entitled to operate under a conference agreement that exempts certain practices of the conference from the provisions of the *Competition Act*. The Canadian Transportation Agency is responsible for administering SCEA.

Lines that choose not to participate in conferences are considered "independent" shipping lines or non-conference carriers. These generally offer rates and services that are comparable with conference operators and contribute to a competitive international shipping industry. China Shipping Container Line, Coral Container Line, Costa Container Line, Hoegh Lines, Kent Line and Westwood Shipping Line were among the lines providing independent services to Canada in 2001. Liner operators may also choose to be a conference member on certain routes and an independent operator on others. For example, Maersk Sealand is a member of the Canadian conferences on the transpacific routes but is not a member on the North Atlantic.

## Services Available to Canadian Shippers

In 2001, the Canadian Transportation Agency had 14 shipping conference agreements on file. Twelve of these conferences filed tariffs with the Agency while two of the agreements are non-tariff filing arrangements. Five of the conferences operate between Eastern Canada and Northern Europe and the Mediterranean. Atlantic Container Line, Canada Maritime Ltd., Hapag-Lloyd Container Line, P&O Nedlloyd, MITSUI O.S.K. Lines and

Orient Overseas Container Line were some of the major lines serving Canada as conference members.

Table 10-11 lists the 12 tariff-filing conferences serving Canada in 2001. Eleven serve the East Coast, while seven serve the West Coast.

**TABLE 10-11: SHIPPING CONFERENCES SERVING CANADA IN 2001**

Australia/Canada Container Line Association (E & W)
Canada/Australia–New Zealand Association of Carriers (E & W)
Canada/Australia–New Zealand Discussion Agreement (E & W)
Canada Transpacific Stabilization Agreement (E & W)
Canada–United Kingdom Freight Conference (E)
Canada Westbound Transpacific Stabilization Agreement (E & W)
Canadian Continental Eastbound Freight Conference (E)
Canadian North Atlantic Westbound Freight Conference (E)
Continental Canadian Westbound Freight Conference (E)
Mediterranean Canadian Freight Conference (E)
Mediterranean North Pacific Coast Freight Conference (W)
New Zealand/Canada Container Lines Association (E & W)

Notes: E = East Coast; W = West Coast.  
Tariff-filing conferences only.

Source: Canadian Transportation Agency

Shippers benefit not only from competition between conference and non-conference carriers, but also within conferences through the independent action provision contained in the *Shipping Conferences Exemption Act*. The provision permits individual conference lines to offer a rate, or services, different from those published as part of the conference tariff. The recently amended SCEA allows independent action by a conference line to take effect more quickly (five days as opposed to 15 in the old Act).

In addition, under the amendments to SCEA, individual conference lines may now sign service contracts with shippers without disclosing the contract terms and conditions to the conference. These pro-competitive provisions are designed to maintain Canadian conference legislation in balance with Canada's major trading partners and support the recent trend toward a greater reliance on the marketplace.

As under the previous legislation, conference-wide service contracts may also be negotiated and signed between a conference and a shipper. These contracts are confidential but, to comply with SCEA, must be filed with the Canadian Transportation Agency.

In 2001, the Agency accepted filings for 98 service contracts from seven conferences, four more than in 2000. The contracts applied to both inbound and outbound traffic and to origins/destinations on both the east and west coasts of Canada. The average duration of the contracts was one year.

7 Containerization International: "The Big Have Got Bigger," November 2001, page 63.



## OVERVIEW OF MAJOR FERRY SERVICES

**Marine Atlantic Inc. (MAI)**

Marine Atlantic Inc. is a federal Crown corporation that operates the constitutionally guaranteed year-round ferry link between North Sydney, Nova Scotia, and Port aux Basques, Newfoundland, and the seasonal alternative between North Sydney, Nova Scotia, and Argentia, Newfoundland.

**Woodward Group**

Operating under contract with the Province of Newfoundland and Labrador, the Woodward Group offers a single passenger/vehicle ferry service from May to January between Blanc Sablon, Quebec, and St. Barbe, Newfoundland.

**Newfoundland and Labrador's Department of Works, Services and Transportation**

Newfoundland and Labrador's Department of Works, Services and Transportation provides all intraprovincial and coastal ferry services in Newfoundland and Labrador, in some cases under contract with private companies. In addition, this provincial department operates the coastal service to Labrador formerly provided by Marine Atlantic Inc.

**Northumberland Ferries Limited (NFL)**

Working under contract with the federal government, Northumberland Ferries Ltd. provides a seasonal passenger/vehicle service from May to December between Caribou, Nova Scotia, and Wood Islands, Prince Edward Island.

**Bay Ferries Limited**

Working under contract with the federal government, Bay Ferries Ltd. offers year-round passenger/vehicle service between Saint John, New Brunswick, and Digby, Nova Scotia, and seasonal fast ferry service from June to mid-October between Yarmouth, Nova Scotia, and Bar Harbor, Maine.

**Nova Scotia's Department of Transportation and Public Works**

Nova Scotia's Department of Transportation and Public Works operates seven passenger and vehicle ferry services, including cable ferries at LaHave, Country Harbour, Englishtown and Little Narrows, and self-propelled ferries at Tancook Island, Petit Passage and Grand Passage.

**Coastal Transport Ltd.**

Operating under contract with the Province of New Brunswick, Coastal Transport Ltd. offers year-round passenger/vehicle service between Black's Harbour and the Island of Grand Manan, and between Ingalls Head on Grand Manan and White Head Island.

**New Brunswick's Department of Transportation**

New Brunswick's Department of Transportation operates 12 passenger and vehicle ferry services, including Deer Island, Gagetown, Hampstead and Belleisle Bay.

**C.T.M.A. Traversier Ltée**

Working under contract with the federal government, C.T.M.A. Traversier Ltée. offers seasonal passenger/vehicle ferry service from April to January between Souris, Prince Edward Island, and Cap-aux-Meules, Magdalen Islands, Quebec. In addition, the company provides seasonal passenger/cargo service between Montreal and Cap-aux-Meules under contract with the Province of Quebec.

**La Société des traversiers du Québec (STQ)**

With a subsidy from the Province of Quebec's transportation ministry, La Société des traversiers du Québec (STQ) provides five year-round passenger/vehicle ferry services across the St. Lawrence River. In addition, STQ is also responsible for three provincially subsidized services operated by private companies between Rivière-du-Loup and Saint-Siméon; Montmagny and Île-aux-Grues; and Cap-aux-Meules and Île-d'Entrée.

**Ontario Ministry of Transportation**

The Ontario Ministry of Transportation provides financial support to four year-round ferry operations in eastern Ontario, including services to Glenora, Wolfe Island, Amherst Island and Howe Island.

**Owen Sound Transportation Company (OSTC)**

The Owen Sound Transportation Company (OSTC) provides passenger/vehicle services on Lake Huron between Tobermory, Ontario, and South Baymouth, on Manitoulin Island, from May to mid-October. In addition, OSTC operates the services on Lake Erie between Leamington/Kingsville and Pelee Island, Ontario, and Sandusky, Ohio, from April through December on behalf of the Province of Ontario.

**Manitoba Department of Highways and Transportation**

Manitoba's Department of Highways and Transportation operates seven passenger/vehicle ferries on the province's lakes and rivers, including services to Norway House, Matheson Island and Cross Lake.

**British Columbia Ferry Corporation (BC Ferries)**

BC Ferries, a provincial Crown corporation operates the largest ferry service in North America, with a fleet of 40 vessels on 26 routes. BC Ferries provides ferry services in coastal waters with some financial assistance through a federal grant.

**British Columbia's Ministry of Transportation**

British Columbia's Ministry of Transportation operates the province's 16 inland ferry services, including Adam's Lake, Barnston Island, Glade, Kootenay Lake, and Galena/Shelter Bay, with two services under contract with two private operators.

## MARINE PASSENGER TRANSPORT SERVICES

### FERRY SERVICES

Although most major ferry operators in Canada belong to the Canadian Ferry Operators Association (CFOA), Canada's ferry services vary widely. Ownership ranges from small private operators to provincial governments and federal Crown corporations; vessel types range from small cable ferries to large cruise-type vessels and fast ferries; and operations range from seasonal to year-round schedules. Ferry companies, municipalities, provincial and federal governments, and private companies also variously own, lease and operate terminal and docking facilities.

### Federal Subsidies to Ferry Operations

In a move to allow the private sector to provide some ferry services, the 1995 National Marine Policy outlined the federal government's goal to make the marine sector commercially oriented and reduce its involvement in the direct delivery of transportation services.

Since then, Marine Atlantic Inc., a federal Crown corporation, has commercialized some of its routes and transferred others to the Province of Newfoundland and Labrador. Its subsidies were in the order of \$36 million in 2001/02, compared with a peak of \$122 million in 1993. The corporation will continue to provide constitutionally guaranteed ferry services between Nova Scotia and Newfoundland.

Marine Atlantic Inc. and two private-sector operators, Northumberland Ferries Ltd. and C.T.M.A. Traversier Ltée, are now the only federally supported ferry services in Atlantic Canada. On the West Coast, the federal government also provides an annual grant to the BC Ferries Corp.

In addition, an agreement with Bay Ferries Ltd. for the two Bay of Fundy services has been structured to phase out operating subsidies by 2000/01 and capital subsidies by 2002/03. This agreement is another example of improved efficiencies and of the National Marine Policy's being successfully implemented in the ferry program. Beginning in 2002, the company will continue to operate as an independent commercial ferry service.

In the management of ferry operations, service to Canadians and security remain critical. In 2001, Marine Atlantic Inc. put the *MV Leif Ericson* (formerly the *MV Stena Challenger*), and recently acquired fourth vessel, into service to respond to increased demand and anticipated traffic growth between Newfoundland and Nova Scotia.

## CRUISE SHIP INDUSTRY

Currently, the international cruise sector is experiencing a time of adjustment, with many factors at work. The events of September 11, 2001, occurred when the industry was already beginning to feel the effects of the economic slowdown and facing a considerable backlog of large new ships coming into service over the next 12 months. The fallout from the terrorist attacks pushed US-based Renaissance Cruises and American Classic Voyages into bankruptcy. American Classic Voyages had vessels calling in eastern Canada and the Great Lakes.

Other companies have reduced their staff, and still others are involved in mergers. In November, Royal Caribbean and P&O Princess Cruises (the second- and third-largest cruise operators after Carnival) announced that they were planning to merge their operations, pending regulatory approval. Then in December, Carnival announced a rival takeover bid for P&O Princess Cruises in a move planned to upset its proposed merger with Royal Caribbean.

On the Alaskan route, environmental concerns again surfaced as a major issue in 2001. Alaska passed a stringent new law to regulate cruise ship pollution in state waters. Several vessels were cited for violations during 2001. Areas of concern relate to visible smoke emissions, air quality, traffic in communities, wastewater discharge, oil spill response, and the impact on sea life.

The large cruise vessels calling at Canada's ports are owned by foreign-based companies and fly foreign flags. These vessels offer two basic types of extended cruises: the luxury cruise and the pocket cruise, distinguished by vessel capacity of more or less than 150 passengers.

After the Caribbean and the Mediterranean, Alaska cruises through British Columbia's scenic Inside Passage are the most popular in the world. Most luxury cruise vessels sailing to Alaska use the Port of Vancouver as their "home port" (where passengers embark and/or disembark). The *US Passenger Vessel Act* prohibits foreign-flag vessels from carrying passengers between US ports (i.e. embarking passengers at one US port and disembarking them at another). Trips between Vancouver and Alaska also fit conveniently into seven days. Seattle's recently opened cruise facility attracted calls by the Norwegian Cruise Lines during 2000 and 2001. To comply with the *US Passenger Vessel Act*, ships calling in Seattle and travelling to Alaska include a stop at Vancouver/Victoria. Mini-cruises (three to four days) operate between Seattle, Vancouver and Victoria, and are proving increasingly popular with the public.

In eastern Canada, luxury cruise ships regularly sail out of New York and up the eastern seaboard. They make

stops in Halifax, Charlottetown and other east coast ports before entering the St. Lawrence River for calls at Quebec City and Montreal. There are also shorter cruises out of New York or Boston, which travel northward to Halifax, Saint John and other Atlantic ports. The fall colour season used to see the heaviest traffic, but the cruising season now extends over several months, beginning as early as May or June. Eastern Canadian ports receive calls from all the world's major cruise lines — including Carnival, Royal Caribbean, Cunard, Princess, Holland America and others. Pocket cruises travel the St. Lawrence River between Montreal or Quebec City, and Kingston or Rochester. They even travel by canal through New York State up to Lake Ontario and then into the St. Lawrence River. Vessels travelling into or out of the Great Lakes on repositioning voyages also call at Quebec and Atlantic ports en route.

Across Canada, local Canadian operators offer a multitude of lock, harbour and river cruises, as well as excursion cruises, such as those for whale watching.

## AIR TRANSPORTATION INDUSTRY

### MAJOR EVENTS IN 2001

#### OVERVIEW

The year 2001 was a turbulent one, with an economic downturn and a progressive decline in the rate of exchange of the Canadian dollar vis-à-vis its US counterpart. Compounding this were the terrorist activities in the United States in September, which had significant repercussions on airline operations worldwide.

Despite the fact that the demand for air service is directly linked to general economic activity, throughout the first eight months of 2001, Canadian air carriers experienced moderate traffic growth. Airline revenues suffered, however, as high-yield business traffic stagnated and declined. Airlines faced rising costs, particularly for expenses paid for in US dollars such as fuel and, for large operators especially, aircraft lease payments.

In the first half of 2001, there were indications that competitive market forces were prevalent within the air transportation framework that was established as law in July 2000 under Bill C-26. These indicators included new entrants and expansion by several carriers. These same market forces, however, prompted some carriers to

reduce the level or frequency of service, to exit the market, or even to cease operating.

On September 11, 2001, the world witnessed the terrorist attacks in the United States. Governments and all facets of the travel industry, particularly air transportation, were immediately thrust into crisis. The economic fortunes of Canadian air carriers were severely exacerbated by these events. During the last four months of the year, traffic levels declined and financial results weakened significantly. The impact was most marked in September and October but the situation for Canadian airlines gradually improved in November and December, although traffic remained well below comparable historic levels.

Despite the events of September 11, the annual traffic levels for Canadian airlines decreased by only two per cent from year-end results for 2000. Most Canadian carriers, with the exception of WestJet, finished 2001 in a weakened financial situation.

Air Canada continued to be the dominant carrier in terms of its capacity in domestic, transborder and other international air services. WestJet and Canada 3000, until its failure in November, were the main competitors catering to price-sensitive travellers with low-fare services. Leisure or package tour operators that charter flights that they operate themselves, or through such carriers as Air Transat and SkyService, also offered air services. In addition, many other smaller carriers offered regional, local or specialty air services. The industry structure did change, however, due primarily to forces beyond its control. A case in point was the demise of Canada 3000.

#### GENERAL GOVERNMENT INITIATIVES

##### The 33rd Annual General Assembly of the International Civil Aviation Organization

The International Civil Aviation Organization (ICAO) held its 33rd Annual General Assembly at its Montreal headquarters in late September. In view of the events of September 11, the majority of discussion centred on making the aviation industry even more secure. Canada took the following positions on a number of important issues:

- strongly encouraging the Assembly to adopt a resolution condemning terrorist acts against civil aviation;
- welcoming the proposals put forward by the European Transport Minister, which seek to ensure the application of enhanced civil aviation security measures.



- supporting the concept of holding a meeting of high-level officials or Ministers as soon as possible to ensure ICAO agreement with resolutions adopted in the field of aviation security;
- supporting a review of the ICAO Aviation Security Panel's mandate and structure;
- supporting a review of Annex 17 to the Chicago Convention to strengthen standards for aviation security; and
- supporting proposals to have the ICAO institute a global aviation security oversight program.

### **Bill S-33 – Amendments to the *Carriage by Air Act***

On December 31, 2001, the federal government passed into law Bill S-33, which amended the *Carriage by Air Act* to allow Canada to ratify the 1999 Montreal Convention. The Montreal Convention was designed to consolidate and modernize into a single legal instrument the international regime of air carrier liability for international air carriage as is set out in the 1929 Warsaw Convention and its various amending protocols, which are enabled for application in Canada under the *Carriage by Air Act*.

The Warsaw Convention is the prevailing worldwide system of standard rules, which limits air carrier liability and compensation levels for the injury or death to passengers, and for the damage, delay or loss of baggage or cargo, during international air transport. Once ratified by a quorum of 30 nations, however, the Montreal Convention will not necessarily limit the air carrier's liability, specifically to its international passengers, but will continue to preserve the universality and certain other aspects of the Warsaw system. Other features of the Montreal Convention include:

- air carriers must maintain adequate insurance to cover their potential liability;
- in addition to the existing bases of jurisdiction, legal action for damages resulting from the death or injury of a passenger may be brought in the country of the passenger's principal and permanent residence so long as the carrier is active in that jurisdiction;
- an authorization for simplified, modern documents such as electronic tickets for passengers, and waybills for cargo; and
- carriers may be required by national law to make advance payments without delay to assist entitled persons in meeting immediate economic needs, the amount of which would be subject to national law and deductible from the final settlement.

### **GOVERNMENT INITIATIVES TO ADDRESS SAFETY AND SECURITY ISSUES FOLLOWING SEPTEMBER 11**

Following the events of September 11, the federal government acted immediately on several fronts to address real and potential threats to public safety and security. In chapter 4, a list of the measures and actions taken is provided. Some of these measures became part of the \$2.2 billion in air security initiatives announced in the federal budget tabled on December 10, 2001. The cornerstone of these initiatives was the creation of the new Canadian Air Transport Security Authority (CATSA) to improve aviation security. Details of this initiative can be found in Appendix 10-1.

Since October 12, 2001, the government has facilitated Air Canada's access to Reagan National Airport in Washington, D.C., by making armed Royal Canadian Mounted Police (RCMP) officers available for flights to that airport. In the interest of the safety and security of Canadian travellers, and as part of the ongoing commitment to improving the safety and security of Canada's air transport system, the government expanded its program of armed police on board aircraft on selected domestic and international flights. This program has been established as an ongoing security program. CATSA will enter into an agreement with the RCMP to provide the officers and the necessary training for this program and will also oversee the delivery of services. Even before CATSA takes over responsibility for these functions on April 1, 2002, the government will be providing immediate funding for armed police on board aircraft.

In recognition of the extra costs resulting from the heightened security requirements post-September 11, the government committed to making a one-time contribution for policing costs related to aviation security at major airports. The government committed to a payment of a maximum of \$20 million in 2001 for heightened policing and security at airports.

As part of the December 10, 2001, federal budget, the government announced that effective April 1, 2002, every purchaser of air transportation will be charged a fee to cover the cost of increased security. The government believes that the cost of heightened security should be borne by those who will directly benefit from it.

Finally, the government introduced Bill C-42, the *Public Safety Act* and Bill C-44, an Act to amend the *Aeronautics Act* to enhance public security. Further details of Bill C-42 are included in Appendix 10-2. With the passage in the United States of the *Aviation and Transportation Security Act*, airlines entering the United States must provide

information to the Commissioner of Customs on the passengers and crew members entering the country. To ensure Canadian airlines could comply with this requirement, the federal government passed Bill C-44 in December, 2001 to coincide with the implementation of the new US law.

### **GOVERNMENT INITIATIVES TO ASSIST AND STRENGTHEN CANADIAN AIR CARRIERS FOLLOWING THE EVENTS OF SEPTEMBER 11**

On September 22, 2001, after international insurers withdrew previous levels of coverage, the federal government announced that it would provide short-term indemnification for third-party war and terrorism liabilities for essential aviation service providers in Canada. To help ensure that aviation services would continue uninterrupted, the coverage applied to Canadian air carriers, airports, NAV Canada, the Air Transport Security Corporation and other essential service providers at airports, such as ground handlers and refuellers. Without the short-term indemnity, which the federal government continues to provide (pending the development of new commercial coverage), the airline industry would have shut down.

When Canada 3000 encountered short-term financial difficulties in the month following September 11, the Minister of Transport announced that the government would provide a loan guarantee, with strict conditions, to assist the airline in overcoming its short-term liquidity problems. It was made clear to Canada 3000 that certain prerequisites had to be met before any assistance would be considered. One of the requirements was that the airline had to demonstrate that it could return to profitability based on a sound business plan. Canada 3000 concluded that it did not have a viable business plan and its Board of Directors made the decision to cease operations on November 11, 2001.

Before the end of the year, the federal government passed Bill C-38, legislation designed to remove the 15 per cent limit on individual ownership of shares in Air Canada. The provisions of Bill C-38 will allow greater opportunities for private-sector investment in Air Canada. With this legislative change, Air Canada will be on the same footing as all other airlines in Canada with respect to both ownership and foreign ownership limits. While there are no limits on the number of voting shares that can be held individually by Canadians, there remains a 25 per cent limit on the number of voting shares that can be held collectively by non-Canadians.

## **DOMESTIC**

In 2001, four reports were issued regarding progress in airline industry restructuring that began in 1999.

Bill C-26 established the office of the Air Travel Complaints Commissioner in July 2000. The mandate of this office is to review consumer complaints concerning any airline operating in Canada where the airline has not responded to the satisfaction of the complainant. The first report of the Air Travel Complaints Commissioner was released on March 29, 2001, and the second on November 29, 2001. Full details of these two reports can be found in the annual report of the Canadian Transportation Agency on the Agency's Web site at [www.cta-otc.gc.ca](http://www.cta-otc.gc.ca).

The Transition Observer on Airline Restructuring also issued two reports. Ms. Debra Ward was named to this position in August 2000 and was given a mandate to examine the overall impact of airline restructuring on consumers, on urban, rural and remote communities, on travel agents and airports, and on airlines and their employees.

The first interim report, released on February 22, 2001, contained observations on the perceptions of industry restructuring, on the impact on tourism, and on the rules governing foreign ownership and control, cabotage and their impact on competition. It also contained a recommendation that communities and stakeholders be given better access to air industry data.

The second interim report, released September 10, 2001, contained observations on industry issues emerging at the time, such as competition, customer service, consumer protection measures, and the international and domestic airline environment. Ms. Ward is expected to submit her final report, with appropriate recommendations, to the Minister of Transport in the summer of 2002. ([www.tc.gc.ca/pol/en/Air/Airline\\_Restructuring\\_Menu\\_Page.htm](http://www.tc.gc.ca/pol/en/Air/Airline_Restructuring_Menu_Page.htm)).

Ms. Ward raised an issue that is essential to assessing the status of the air industry: the need for more comprehensive public data, especially on prices and traffic levels. To address this need, the Minister convened a data conference in June, bringing together stakeholders and other key agencies to discuss the collection, distribution and analysis of information necessary to properly assess, improve and identify opportunities in the air travel industry.

At this conference, it became apparent that an accurate and timely picture of the air transportation system could not be drawn from the current reporting systems. Over the

past decade, the air industry and reporting technologies have changed significantly, and the current requirements for reporting no longer meet the needs of government and other stakeholders. To come up with a new plan in 2002, the government is continuing consultations with stakeholders. The issues presently being considered for improvement include:

- helping decision-makers with more timely traffic data;
- minimizing the reporting burden on airlines;
- protecting commercially sensitive information; and
- allowing the public to have access to basic data about carriers' performance in their communities.

## INTERNATIONAL

On January 18, 2001, Canada and the United States signed a new agreement that will modernize the regime governing preclearance services. United States preclearance services (e.g. Customs and Immigration) are currently available at Calgary, Edmonton, Montreal, Ottawa, Toronto, Vancouver and Winnipeg airports. Precleared travellers can be treated as domestic passengers upon their arrival in the US. Preclearance also allows direct flights to airports in the US that do not have Customs and Immigration facilities.

Another benefit of the new agreement is that it will provide for intransit preclearance, which allows international transit passengers en route to the US to bypass Canadian customs and immigration inspectors and proceed directly to US preclearance. By reducing a two-step process to one, this will allow participating airlines to attract more international transit traffic and Canadian airports to become more effective international gateways to the United States.

The US agreed to introduce intransit preclearance at Vancouver Airport as a pilot project, effective June 1997. In return the Canadian government agreed to introduce legislation that would grant US preclearance officers enhanced inspection powers and immunities. On June 17, 1999, the *Preclearance Act* received Royal Assent. Under the Act, US border inspectors may administer, within the confines of a designated preclearance area in an airport, certain US laws related to customs, immigration, public health, food inspection and plant and animal health. However, criminal matters remain Canada's responsibility. Furthermore, the application of preclearance laws is subject to Canadian law, including the *Canadian Charter*

*of Rights and Freedoms*, the *Canadian Bill of Rights*, and the *Canadian Human Rights Act*.

## MAJOR COMMERCIAL AIR SERVICES

Air Canada remained the nation's largest carrier during 2001. Along with its affiliates and domestic code-share<sup>8</sup> partners (see Table 10-12), Air Canada provided a comprehensive network of domestic, transborder and other international air services. The Air Canada network was further extended by its membership in the Star Alliance. It and other comprehensive global alliances of international airlines offer through code-sharing a "seamless" travel experience on one ticket, even if more

**TABLE 10-12: AIR CANADA'S DOMESTIC CODE-SHARE PARTNERS AS OF DECEMBER 31, 2001**

<i>100 per cent owned affiliates</i>	<i>Other partners</i>
Air Canada Regional <sup>1</sup>	Air Creebec Air Georgian Aviation Québec-Labrador Bearskin Airlines Calm Air Central Mountain Air InterProvincial Labrador Airways NWT Air <sup>2</sup>

1 AirBC, Air Nova, Air Ontario and Canadian Regional are in the process of being merged into Air Canada Regional.

2 Owned by First Air.

Source: Air Canada

**TABLE 10-13: GLOBAL AIRLINE ALLIANCES, 2001**

STAR	Oneworld	Wings	SkyTeam
Air Canada Air New Zealand All Nippon Airways Ansett Australia Austrian Airlines British Midland Lufthansa Mexicana Airlines SAS Scandinavian Air System Singapore Airlines Thai Airways International United Airlines VARIG	Aer Lingus American Airlines British Airways Cathay Pacific Finnair Iberia LanChile Qantas	Continental Airlines Kenya Airways KLM Royal Dutch Airlines KLM UK Northwest Airlines	AeroMexico Air France Delta Airlines Korean Airlines Czech Airlines Alitalia
Associated:	Associated:	Associated:	Associated:
	Air Pacific Japan Airlines Sabena Swissair	Air China Japan Air System Malaysia Airlines	

Note: Braathens was purchased by SAS Scandinavian in December, 2001.

Source: Alliance Web sites, Airline Business Monthly Publication

8 Code-sharing is the ability to sell air travel under one airline's name on the flights of another airline. In the international context, code-sharing allows airlines to sell transportation on the network of services of code-share partners as if it were their own. In addition, by coordinating their marketing efforts, alliance partners can provide a combined product to the consumer, including common check-in, better coordinated connections and priority baggage transfer.



than one airline within the alliance is involved in the travel itinerary. (See Table 10-13 for details of global alliances.)

Air Canada provided transnational air services in competition with WestJet and Canada 3000 Airlines. Several tour operators also provided long-haul domestic capacity in competition with Air Canada on a seasonal basis on charter flights operated by Air Transat and SkyService. Canada 3000 Airlines, WestJet and the tour operators were often the price leaders for long-haul air travel.<sup>9</sup> Their competitive presence disciplined the price of airfares in their classes of service, especially for long-haul travel to western from central Canada.

WestJet grew by expanding its flight frequencies, capacity and network during 2001. First established in 1996, WestJet took delivery of two of five new generation 140-seat B737-700 aircraft to bring its fleet to 25. WestJet uses the B737 family of aircraft exclusively, and the new aircraft, which have transcontinental range, were used to begin direct non-stop air service from western Canada to central Canada. In total, WestJet served its brand of low-fare passenger air services to 15 Canadian cities: Victoria, Vancouver, Abbotsford/Fraser Valley, Prince George, Kelowna, Calgary, Edmonton, Grande Prairie, Saskatoon, Regina, Winnipeg, Thunder Bay, Hamilton, Ottawa and Moncton.

By contrast, Canada 3000 Airlines grew by way of acquisition and merger through its corporate parent, Canada 3000 Inc. Canada 3000 Inc. first acquired Royal Aviation and merged its operations with those of its operating division, Canada 3000 Airlines. Canada 3000 Inc. then acquired and amalgamated CanJet, which itself had only started operations in September 2000 with six 120-seat B737-200 aircraft to points in central and eastern Canada (Winnipeg, Toronto (Pearson Terminal III), Ottawa, Montreal (Dorval), Halifax and St. John's). By June, Canada 3000 Airlines had become the nation's second largest provider of domestic, transborder and other international air services.

First Air and Air NorTerra, both of which are commercial partners in the Air Canada network, provided domestic scheduled air services to communities in Canada's Far North.

Tables 10-14 and 10-15 indicate the market shares of Air Canada and other Canadian operators of air services in Canada's domestic and international markets for the month of December in 2000 and 2001.

**TABLE 10-14: CAPACITY SHARES OF AIRLINES, DECEMBER 2000**

	Trans- continental	Western Canada	Eastern Canada	Northern Canada	Total Domestic
<b>Domestic Markets</b>					
Average Daily Seat-kilometres (thousands)	63,508	22,723	32,394	4,057	122,682
Per cent of Shares					
Air Canada and affiliates	87	61	74	33 <sup>1</sup>	77
WestJet	2	33	2	0	8
CanJet	2	0	7	0	3
Royal Airlines	3	0	8	0	4
Canada 3000	5	2	3	0	4
Air Transat	2	0	1	0	1
First Air	0	0	1	20	1
Other	0	4	4	48	3
<b>International Markets</b>	Trans- border	Atlantic	Pacific	Southern	Total Inter- national
Average Daily Seat-kilometres (thousands)	136,169	116,207	75,279	43,970	371,625
Per cent of Shares					
Air Canada and affiliates	47	52	55	21	47
Foreign Airlines	41	41	42	14	38
Other Canada	11	6	3	65	15

Note: Percentages may not add up to 100 per cent due to rounding

<sup>1</sup> Flights shown here are operated by NWT Air on behalf of Air Canada. NWT Air is owned by First Air which operates under its own code

Source: Published airline schedules and historical data

**TABLE 10-15: CAPACITY SHARES OF AIRLINES, DECEMBER 2001**

	Trans- continental	Western Canada	Eastern Canada	Northern Canada	Total Domestic
<b>Domestic Markets</b>					
Average Daily Seat-kilometres (thousands)	55,334	21,634	24,667	3,430	105,065
Per cent of Shares					
Air Canada and affiliates	90	51	87	20	79
WestJet	8	46	6	0	15
Air Transat	2	0	0	0	1
First Air	0	0	2	41	2
Air NorTerra	0	0	0	30	1
Other	0	4	5	9	2
<b>International Markets</b>	Trans- border	Atlantic	Pacific	Southern	Total Inter- national
Average Daily Seat-kilometres (thousands)	107,520	99,187	84,887	28,566	320,160
Per cent of Shares					
Air Canada	54	50	55	38	51
Foreign Airlines	44	44	45	19	42
Charter Airlines	3	6	0	44	7

Note: Percentages may not add up to 100 per cent due to rounding

International market shares based on December 2001 capacities for scheduled airlines and annual 1999 data for charter airlines

Source: Published airline schedules and Statistics Canada Charter On-Flight Origin and Destination data

<sup>9</sup> Charter carriers operate according to a distinct seasonal pattern. In the winter, their flights connect Canadian centres with "sunspots" in Florida, Mexico and the Caribbean, while in the summer their services operate across Canada and to Europe. This travel pattern reflects leisure travel during these seasons.

Table 10-16 shows the fleets of a number of prominent Canadian airlines.

**TABLE 10-16: AIRCRAFT OF SELECTED CANADIAN CARRIERS IN PASSENGER SERVICE**

Carrier	Wide-bodied	Narrow-bodied	Propeller-driven	Total
Air Canada	75	142	0	217
Air Canada Regional <sup>1</sup>	0	35	93	128
Air Canada other partners:				
Calm Air International	0	0	11	11
Air Georgian/Ontario Regional	0	0	13	13
Central Mountain Air	0	0	12	12
Air NorTerra/Canadian North	0	5	0	5
Air Transat	19	4	0	23
First Air	0	7	19	26
SkyService Airlines Inc.	0	18	0	18
WestJet	0	28	0	28
<b>Total</b>	<b>94</b>	<b>239</b>	<b>148</b>	<b>481</b>

1 Includes former affiliates of Air Canada; AirBC, Air Nova, Air Ontario and Canadian Regional.

Source: BACK/Lundkvist Fleet Database and carriers' Web sites, as of December 31, 2001

A number of air carriers acting on behalf of courier operators provided all-cargo air services, including Kelowna Flightcraft, All Canada Express, Morningstar, Royal Cargo, Winnport, ICC Canada, First Air, FedEx and UPS. Table 10-17 lists the Canadian air carriers and the courier companies on whose behalf they operated all-cargo air services.

**TABLE 10-17: CANADIAN AIR CARGO AIRLINES**

Operator	Courier/All-Cargo Company
Kelowna Flightcraft	Purolator/FedEx
All-Canada Express	BAX/UPS/Canada 3000
Canada 3000 Cargo	Canada 3000
Morningstar	FedEx
Knighthawk Air Express	FedEx/Purolator
ICC Canada	Emery
First Air	First Air/Canada Post

Source: Transport Canada, Air Policy

Table 10-18 indicates the licence authorities held in Canada in 2001, and also shows the number of US-based and other foreign carriers that have the authority to operate to or from Canada on both a scheduled and charter basis. A summary of personnel licences appears in Tables 10-19 and 10-20.

**TABLE 10-18: LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 2001**

Licence Type	Canadian Aircraft				Other	
	Small	Medium	Large	All-Cargo	US	Foreign
Domestic	856	20	11	32	-	-
International						
Scheduled	14	26	75	5	46	59
Non-Scheduled	420	18	10	24	737	87
Total	1,290	64	96	61		
Total Canadian	1,511					
Total US					783	
Total Foreign						146

Note: Represents licence authorities, not the number of carriers; e.g. a carrier can hold multiple licence authorities.

Source: Canadian Transportation Agency

**TABLE 10-19: SUMMARY OF PERSONNEL LICENCES AND PERMITS AS OF DECEMBER 2001**

	In Force	Issued in 2001	Male	Female
<b>Aeroplanes</b>				
Private Pilots	31,174	3,033	29,344	1,830
Commercial Pilots	9,348	1,356	8,730	618
Airline Transport Pilots	11,099	537	10,731	368
Total	51,621	4,926	48,805	2,816
<b>Helicopters</b>				
Private Pilots	437	47	422	15
Commercial Pilots	2,789	237	2,718	71
Airline Transport Pilots	756	54	743	13
Total	3,982	338	3,883	99
<b>Permits</b>				
Glider Pilots	6,104	426	5,379	725
Gyroplane Pilots	33	1	32	1
Balloon Pilots	275	10	254	21
Ultra-Light Pilots	2,561	186	2,483	78
Recreational Pilots	1,182	186	1,108	74
Total	10,155	809	9,256	899
<b>Other Licences</b>				
Flight Engineers	528	14	517	11
Air Traffic Controllers	1,992	85	1,840	152
Total	2,520	99	2,357	163
<b>Total Licences and Permits</b>	<b>68,278</b>	<b>6,172</b>	<b>64,301</b>	<b>3,977</b>

Source: Transport Canada, Safety and Security

**TABLE 10-20: PERSONNEL LICENCES AND PERMITS BY PROVINCE, AS OF DECEMBER 2001**

	Number of Licences	Per cent of Total
British Columbia	14,331	18.7
Alberta	10,267	13.4
Saskatchewan	2,955	3.9
Manitoba	3,784	4.9
Ontario	26,329	34.3
Quebec	13,489	17.6
New Brunswick	1,183	1.5
Nova Scotia	2,102	2.7
Prince Edward Island	185	0.2
Newfoundland	1,243	1.6
Yukon	347	0.5
Northwest Territories	482	0.6
<b>Canada</b>	<b>76,697</b>	<b>100</b>

Note: Student Pilot Permits are included in the provincial numbers.

Source: Transport Canada, Safety & Security

## REGIONAL AND LOCAL AIR SERVICES

During 2000 and 2001, Air Canada amalgamated the operations of its regional operating subsidiaries, namely Air Nova, Air Ontario, AirBC and Canadian Regional, into a single unit under Air Canada Regional with a head office in Halifax and a western hub in Calgary. The subsidiary brought together Air Canada's regional and local air services with a total of 133 aircraft and 4,900 employees.

Carriers not affiliated with Air Canada avoided competing directly with Air Canada's regional air services unit. As a result, there was little overlap between their services and those provided through the Air Canada network. These carriers are most prominent in the northern parts of Newfoundland, as well as in central and western Canada. Table 10-21 lists a number of independent airlines and their major bases of operation.

**TABLE 10-21: LOCAL SERVICE OPERATORS  
PROVIDING SCHEDULED AIR SERVICES  
AS OF DECEMBER 31, 2001**

<i>Airline</i>	<i>Major Base(s)</i>
Air Creebec	Montreal, Timmins and Val d'Or
Air North	Whitehorse
Air Tindi Ltd.	Yellowknife
Aklak Air	Inuvik
Aviation Québec-Labrador	Sept-Îles
Bearskin Airlines	Sudbury and Thunder Bay
Buffalo Airways Ltd.	Yellowknife
Calm Air International Ltd.	Thompson, Rankin Inlet and Winnipeg
Harbour Air Ltd.	Vancouver Harbour
Hawkair	Terrace
Helijet Airways	Victoria Harbour and Vancouver Harbour
K.D. Air	Vancouver
Keewatin Air Limited	Rankin Inlet and Churchill
Kenn Borek Air	Iqaluit and Resolute
Keystone Air Service	Winnipeg
Labrador Airways	Goose Bay and St. John's
Nakina Air Service Ltd.	Thunder Bay
North Vancouver Air	Vancouver
Northwestern Air Lease Ltd.	Yellowknife
North-Wright Airways Ltd.	Norman Wells
Pacific Coastal Airlines Limited	Vancouver
Peace Air	Edmonton
Perimeter Airlines	Winnipeg
Provincial Airlines	Goose Bay and St. John's
Skyward Aviation Ltd.	Rankin Inlet and Thompson
Transwest Air	Saskatoon
Trillium Air	Kitchener
West Coast Air	Vancouver Harbour

Source: Official Airline Guide

## GENERAL AVIATION

General aviation represents about half of all aircraft movements at controlled airports, although much of the activity in 2001 was at non-controlled airports. Recreational flying in its various forms represented the bulk of general aviation activity, accounting for about two thirds of Canada's pilots and three quarters of all aircraft registered in Canada in 2001. It is also the largest segment of Canadian civil aviation activity. Table 10-22 and Figure 10-7 give details about recreational aviation.

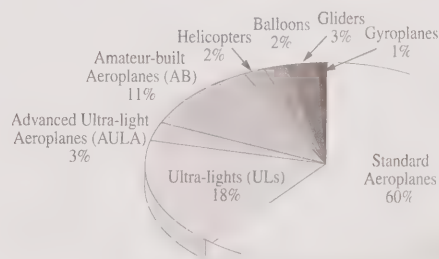
**TABLE 10-22: PROFILE OF THE RECREATIONAL AVIATION  
FLEET AS OF DECEMBER 31, 2001**

<i>Type of aircraft</i>	<i>Total aircraft</i>
Standard Aeroplanes	13,350
Ultra-lights (ULs)	3,932
Advanced Ultra-light Aeroplanes (AULAs)	652
Amateur-built Aeroplanes (AB)	2,362
Helicopters	419
Balloons <sup>1</sup>	452
Glider	613
Gyroplanes <sup>2</sup>	191
<b>Total Private registered aircraft</b>	<b>21,971</b>

- 1 Includes airships.  
2 Includes ornithopters.

Source: Canadian Civil Aircraft Register

**FIGURE 10-7: PROFILE OF THE RECREATIONAL AVIATION  
FLEET AS OF DECEMBER 31, 2001**



Note: Airships and ornithopters are included in the balloon and gyroplane categories, respectively.

Source: Canadian Civil Aircraft Register

Specialty air services make up a variety of commercial air activities that share the common characteristic of not involving the movement of passengers or cargo between two points. They include flight training; parachute jumping; glider towing; aerial forest fire management and fire fighting; aerial inspection and construction; aerial photography and surveying; advertising; weather-sounding; crop spraying and heli-logging. This category also includes air cushion vehicle services. While some



large companies (e.g. Canadian Helicopters) are represented in this sector, many of the companies are very small operators serving local markets.

Business aviation continued to grow due to “fractional ownership,” whereby individuals or businesses that would not otherwise own an aircraft by themselves share its use in a program that sold units of flight time. Fractional ownership programs in Canada are regulated as commercial air services.

**APPENDIX 10-1****CANADIAN AIR TRANSPORT SECURITY AUTHORITY (CATSA)**

1. The Canadian Air Transport Security Authority (CATSA) will be a crown corporation reporting to the Minister of Transport. It will be accountable for the delivery of consistent, effective and highly professional air transport security services at the standards set by federal regulations.
2. CATSA will be responsible for all pre-boarding screening of passengers at designated airports, based on national performance standards. With the aid of a stable and qualified workforce, it will make screening services across the country more effective and consistent. It will also introduce comprehensive quality assurance mechanisms to support its primary objective of providing enhanced, efficient security screening. Consistent uniforms for CATSA personnel and signage at the airports across the country will provide clear, visible evidence of this service.
3. CATSA will certify and test all security officers responsible for delivering screening services. It will award certification on the basis of new security training standards it sets in accordance with Transport Canada's enhanced regulatory requirements.
4. CATSA will establish contracting policies that address certain basic working conditions that can affect the ability of a screening officer to do his or her job effectively, such as wages and hours of work.
5. CATSA will be responsible for acquiring, maintaining and operating screening equipment to provide an integrated, seamless service.
6. CATSA will be responsible for the programs of enhanced airport policing for civil aviation security measures and armed police officers on board aircraft.
7. Transport Canada will continue to establish standards and regulations for the delivery of aviation security services, and to monitor for compliance.

Note: CATSA can deliver pre-board screening either by deploying its own screening officers, authorizing airport operators, or entering into contracts with (certified) screening companies

**APPENDIX 10-2****BILL C-42: THE PUBLIC SAFETY ACT**

Bill C-42 was the second omnibus bill<sup>1</sup> introduced by the federal government. It involves 20 Acts of Parliament. Many of the proposed amendments were already under development before September 11, 2001, as part of the government's ongoing efforts to review and modernize its legislation. A review of the *Aeronautics Act*, for example, was already under way, and public consultations had taken place. The *Aeronautics Act* was amended to clarify, update and expand existing aviation security authorities. Some of the existing authorities in this Act that were clarified include:

- the authority to make regulations concerning restricted areas at airports;
- screening of people entering restricted areas; and
- security requirements for the design or construction of airport, airports and other aviation facilities.

These amendments are aimed at deterring incidents involving unruly passengers, more commonly known as “air rage,” by making it an offence to engage in any behaviour that endangers the safety or security of a flight or those on board an aircraft. Such behaviour would include interfering with crew members or persons following crew members' instructions. As a result of this particular amendment, anyone who commits an offence could face a fine of up to \$100,000, or imprisonment of up to five years, or both.

The amendments will also expand certain authorities to make regulations, including regulations concerning restricted areas. The amendments will allow for regulations to establish restricted areas inside aircraft, airports and other aviation facilities such as air traffic control towers. The amendments will also enhance regulations for security clearances, including requiring crop duster pilots to obtain security clearances. Furthermore, the amendments will expand regulations concerning the screening of persons entering restricted areas. This includes permitting or requiring screening of people entering restricted areas, even those who already have security clearances or possess a restricted area access pass.

The intent of these amendments is to enhance the ability of the government and the aviation industry to provide a safe and secure environment.

The amendments are another step in the process of strengthening the aviation security regime to meet post-September 11 requirements.

There are many elements of Bill C-42 that do not relate to transportation but that will contribute to national safety and security. The Bill will deter irresponsible hoaxes that endanger the public or heighten public anxiety. Such hoaxes include imitation biological agents or toxins (like anthrax), toxic chemicals and radioactive material. The maximum penalty for initiating hoaxes depends on the seriousness of the offence, and will range from 18 months for a summary charge to ten years for an indictable charge.

Bill C-42 will also establish tighter controls over explosives and hazardous substances by strengthening the government's role in regulating the acquisition and exportation of explosives and their transportation through Canada. It will also speed implementation of various amendments already made to the Immigration Act, in order to bring into effect certain priorities — for example, denying terrorists access to the refugee determination system rather than waiting until regulations can be brought in under the recent framework legislation contained in Bill C-11. In addition, Bill C-42 will:

- provide for control over the export and transfer of technology;
- prevent unauthorized use or interference with Defence computer systems; and
- deter the proliferation of biological weapons by enacting the *Biological and Toxin Weapons Convention Implementation Act*.

The amendments in Bill C-42 will also give the government power to issue interim orders in extraordinary circumstances, where they are essential to safety or security. These interim orders are not intended to bypass or undermine the regulatory process. They would only be issued in special situations, such as:

- where there is serious threat or significant risk — direct or indirect — to health, safety, security or the environment;
- where there is no regulation, or inadequate regulations, to address the threat; or
- where there is a need for immediate action.

Several provisions ensure a significant degree of control. For example, the interim order is subject to judicial review, is valid for a period up to one year, and could be repealed at any time. The *Public Safety Act* presents a package of legislative measures designed to protect Canadians from terrorism.

The amendments introduced in Bill C-42 also address the issue of passenger data that may be required, both at home and abroad, in the interest of transportation security. The amendments would allow for regulations that enable the government to require air carriers and operators of aviation reservations system to provide basic information on a specific passenger, while balancing the privacy rights of that passenger. The amendments would also enable air carriers, subject to regulations, to release passenger and crew data to a foreign government, where the laws of that country require such information.

Other amendments have been developed in response to September 11 and add features to various Acts that will bolster Canada's ability to deal with security threats and to respond quickly and effectively to security issues.

1 Bill C-36 was introduced in October 2001 as part of the government's Anti-Terrorism Plan.



*Freight transportation expenditures grow and shrink with the overall economy.  
Freight transportation volumes are a barometer of production.*

Previous chapters have given a sense of the changes that have delimited freight transportation needs. This chapter looks at freight transportation, both domestic and international freight traffic, demonstrating the use made of each mode of transportation.

## RAIL TRANSPORTATION

The output of Canadian railways increased from 1999 to 2000. CN reported 166 billion revenue tonne-kilometres, up 4.8 per cent from 1999, while CPR reported 125 billion revenue tonne-kilometres, up 11.2 per cent. Class II carriers (regional and shortline railways) reported their largest output level ever, a combined 30 billion revenue tonne-kilometres, which was a nine per cent increase from 1999.

In 2000, Class II railways forwarded 16.2 million tonnes of traffic to CN and CPR and received 9.2 million tonnes from these Class I carriers. Class II railways accounted for 17.4 per cent of the estimated 177.5 million tonnes of traffic originating on Canadian railways.

Based on three quarters of data for 2001, figures for Canadian operations for CN and CPR are expected to be similar to those for 2000. CN is estimated at 158.1 billion revenue tonne-kilometres and CPR is estimated at 125.0 billion revenue tonne-kilometres. In terms of their systems (Canadian and US operations), CN is estimated to increase slightly to 220 billion tonne-kilometres, while CPR is estimated to remain the same at 161 billion tonne-kilometres.

### TRANSBORDER RAIL OPERATIONS AFTER SEPTEMBER 11, 2001

Transborder rail operations were not affected by interruptions and/or long delays at the border after the September 11 attacks on the United States. Streamlined, electronic exchange of rail traffic information occurs before arrival at border locations. Such a comparative advantage may explain the uninterrupted flow of transborder traffic and, also, the slight increase in Canada's rail trade with the United States observed from October to November of 2001 compared with 2000.

## RAIL TRAFFIC — TRADE WITH THE US

### EXPORTS

Export rail tonnage increased by 7.9 per cent to 63.7 million tonnes from 1999 to 2000. It then dropped back close to 1999 values in 2001. Coal roughly tripled in tonnage from 1999 to 2000 and continued to increase, reaching almost 1.4 million tonnes in 2001. Forest products remained the largest contributor to export tonnage, averaging 35.7 per cent of total exports for the last two years.

In terms of value, automotive products remained the largest contributor, averaging 54 per cent of rail traffic destined for export in 2000 and 2001. This was followed by forest products, with an average share of 21 per cent.

Ontario remained the largest contributor to rail export volume, originating an average 29 per cent share of exports in 2000 and 2001. Quebec and British Columbia were other major provinces of origin, each contributing about 17 per cent.

Table 11-1 compares exports by rail of different commodity sectors from 1999 to 2001.

TABLE 11-1: RAIL EXPORTS AND IMPORTS BY COMMODITY, 1999 – 2001

	Exports			Imports		
	1999 tonnage	2000 tonnage	2001 tonnage	1999 tonnage	2000 tonnage	2001 tonnage
Agricultural and Food	1,388,704	1,571,531	1,589,219	2,009,998	2,190,073	3,130,326
Automotive	2,694,592	2,892,155	2,644,597	1,168,327	1,219,610	1,101,170
Chemicals	8,868,838	9,148,159	8,788,277	4,440,485	4,651,126	4,883,585
Coal	409,384	1,216,298	1,563,035	160,102	151,263	100,325
Fertilizer Materials	7,955,019	8,559,002	7,958,324	69,036	85,335	52,831
Forest Products	21,113,878	22,548,950	23,434,005	1,061,895	2,208,531	1,177,736
Grains	4,407,870	4,522,346	5,512,321	453,152	649,458	1,856,825
Iron Ore	50,874	52,027	140,145	356,090	488,224	1,382,454
Metals	3,484,761	3,941,446	3,881,323	1,395,160	1,409,508	1,260,443
Miscellaneous	1,308,542	2,090,876	1,986,335	1,491,536	1,747,266	1,908,503
Ores and Mine Products	3,954,885	3,395,330	3,310,219	2,161,966	2,305,018	2,498,818
Petroleum Products	3,373,409	3,751,871	4,143,980	406,824	518,294	591,853
<b>Totals</b>	<b>59,010,756</b>	<b>63,689,991</b>	<b>64,951,780</b>	<b>15,174,571</b>	<b>17,623,706</b>	<b>19,944,869</b>

Source: Statistics Canada, International Trade Division

## IMPORTS

From 1999 to 2001, rail imports increased in tonnage by 31 per cent to 19.9 million tonnes, and increased in value by 7.6 per cent to \$18.1 billion.

Imports of grain more than tripled in volume from 1999 to 2001, becoming one of the top ten commodities imported in 2001. Other major commodities include chemicals, ores and mine products, and other agriculture and food products.

In terms of value, automotive is the dominant commodity, accounting for almost 53 per cent of total imports. Metals and chemicals are also major imports in terms of value, with an aggregate 30 per cent share of total value in 2001. The largest increase in value of imports was grain products, more than doubling from 1999 to 2001.

Almost three quarters of imports were cleared in Ontario (67.5 per cent) in 2001, and this province, as well as Alberta, contributed the most to import growth from 1999 to 2001.

Table 11-1 compares imports by rail of different commodity sectors for 1999 to 2001.

## BORDER CROSSING POINTS

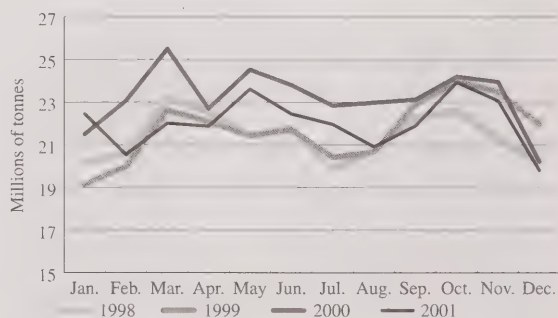
In terms of tonnage, Sarnia, Ontario, remains the leading border crossing point for trade with the United States, averaging 22 per cent of total transborder tonnage each year. Fort Frances and Windsor, both in Ontario, are other major crossing points, accounting for 28 per cent of total tonnage. Major commodities moved across these border locations include forest products, fertilizers, chemicals, grain and automotive products.

## RAIL TRAFFIC — MONTHLY CARLOADINGS

In 2001, annual rail loadings dropped 4.3 per cent to 262 million tonnes. This trend was similar to 2000. Volumes were generally higher in western Canada, at 145 million tonnes, than in eastern Canada, at 117 million tonnes. Principal commodities loaded in the west include grain, coal and fertilizer materials, while ores and mine products, forest products, and intermodal shipments dominated in the east.

Figure 11-1 shows the monthly loadings by rail from 1998 to 2001.

FIGURE 11-1: TOTAL MONTHLY LOADINGS BY RAIL, 1998 – 2001



Source: Statistics Canada, Cat. 52-001; Transport Canada

## RAIL TRAFFIC — COMMODITIES

Table 11-2 compares monthly carloadings of different commodities in 2000 and 2001.

**TABLE 11-2: MONTHLY CARLOADINGS BY COMMODITY,  
2000 – 2001**

Commodity	(Tonnes)	
	2000	2001
Autos and Parts	5,073,068	4,870,733
Chemicals	14,488,072	14,226,207
Coal	40,597,411	40,808,951
Fertilizer Materials	27,150,919	24,461,403
Grain	30,853,035	30,353,969
Intermodal	21,926,361	22,600,530
Iron ore	38,964,148	30,623,518
Metals	9,258,163	9,226,016
Miscellaneous	1,846,575	1,825,369
Non-processed Forest Products	16,615,465	16,074,517
Ores and Mine Products	24,533,257	24,231,866
Other Agricultural and Food Products	7,660,417	6,996,219
Processed Forest Products	23,735,446	23,911,112
Refined Petroleum Products	11,340,299	12,012,881
Sub-total Canadian carloadings	274,042,636	262,223,291
Traffic from US connections	24,082,646	28,671,288
<b>Total Traffic Carried</b>	<b>298,125,246</b>	<b>290,894,579</b>

Source: Statistics Canada, Cat. 52-001; Transport Canada

## GRAIN

Grain traffic, at 30.3 million tonnes in 2001, remained similar to 2000 and continued to be one of the major commodities loaded, accounting for 10.4 per cent of total carloadings. Shipments of wheat increased by 5.4 per cent in eastern Canada, but were offset by a 2.3 per cent decrease in the west. Just over 96 per cent of grain products were loaded in western Canada.

## FOREST PRODUCTS

Processed forest products experienced very little change from 2000 to 2001. A 4.5 per cent increase in western loadings was balanced by a 2.7 per cent decrease in eastern loadings. Tonnage of non-processed forest products decreased by four per cent in both the east and west. In total, forest products accounted for 14 per cent of annual rail tonnage.

## ORES AND MINE PRODUCTS

Iron ore flows dropped significantly in 2001, from 38.9 million tonnes in 2000 to 30.6 million tonnes. Shipments of other ores and mine products remained slightly above 24 million tonnes. Ores and mine products made up 18.8 per cent of total carloadings, compared with 21.3 per cent in 2000.

## FERTILIZER AND FERTILIZER MATERIALS

Fertilizer and fertilizer materials declined to 24.5 million tonnes, the lowest traffic volume for this commodity group in seven years. Shipments of potash, the largest

commodity in this group, decreased by 9.6 per cent. Phosphate rock was the only commodity to experience an increase (69 per cent) since it is now obtained from a domestic source; however, it still remains the lesser commodity of this group, with a three per cent share. Fertilizer and fertilizer materials accounted for 8.2 per cent of total rail tonnage in 2001.

## COAL

Shipments of coal and coke reached 40.8 million tonnes in 2001, up slightly from 40.6 million tonnes in 2000, and increased its share of total carloadings to 15.6 per cent. This slight change reflects an increase of coal shipments in the east.

## INDUSTRIAL PRODUCTS

Metals, automotive, refined petroleum products, and chemicals experienced very little change from 2000 values. The largest of these commodities, chemicals, decreased slightly, from 14.5 to 14.2 million tonnes, although this change was counterbalanced by an increase in refined petroleum products, from 11.3 to 12 million tonnes.

Although automotive commodities loaded in the west experienced a 30 per cent increase, this commodity group decreased slightly, close to 1999 values, at 4.9 million tonnes. Ninety per cent of automotive commodities were loaded in eastern Canada.

Industrial products amounted to 15.1 per cent of total carloadings.

## INTERMODAL

Intermodal shipments increased by almost three per cent from 21.9 to 22.6 million tonnes in 2001. This was due to an increase in container-on-flat-car traffic, which rose from 20.2 to 20.8 million tonnes, as trailer-on-flat-car remained comparable to 2000 volumes at 1.8 million tonnes. Intermodal accounted for 7.9 per cent of total carloadings.

## RAIL TRAFFIC — OVERSEAS TRADE

Class I railways carried a total of 85.7 million tonnes of goods to and from Canadian ports in 2000, a moderate 6.8 per cent increase from 1999.



## RAIL — MARINE EXPORTS

As Table 11-3 shows, coal traffic, the major export commodity involving both rail and marine, decreased by almost 6.3 per cent to 30.4 million tonnes. This was offset by an 18.2 per cent increase in grain, the second major export commodity. Coal, grain, fertilizer materials, and other agricultural and food items accounted for 88 per cent of total rail marine exports. Intermodal shipments totalled 4.2 million tonnes (5.7 per cent of total rail–marine exports).

British Columbia was the major contributor to rail–marine exports with 25.2 million tonnes, followed by Alberta (22.3 million) and Saskatchewan (19 million). Marine exports in transit from the United States totalled 1.2 million tonnes.

## RAIL — MARINE IMPORTS

Class I railways handled 11.3 million tonnes of marine imports in 2000, almost double that of 1999. Most of this, 78 per cent, consisted of intermodal movements. Fertilizer and fertilizer materials was the only commodity group to have experienced a decrease.

Ontario, Quebec and British Columbia were the primary Canadian destination areas of rail–marine imports with 3.5, 2.9 and 1.2 million tonnes, respectively. Traffic in transit to the United States totalled just over 2.5 million tonnes.

Table 11-3 compares the exports and imports of different commodities by rail–marine traffic in 1999 and 2000.

TABLE 11-3: RAIL-MARINE TRAFFIC BY COMMODITY, 1999 – 2000

Commodity	Exports (Tonnage)		Imports (Tonnage)	
	1999	2000	1999	2000
Automotive	149,956	118,649	15,075	147,568
Chemicals	1,355,367	1,747,854	182,107	469,599
Coal	32,463,413	30,425,208	0	20
Fertilizers	8,263,854	7,866,469	718,781	294,470
Forest	2,488,800	2,394,116	30,098	959,791
Grain	16,663,263	19,696,686	531,849	996,188
Metals	46,742	8,552	72,402	228,341
Miscellaneous	207,760	199,459	27,389	206,101
Mixed/Unidentified <sup>1</sup>	4,633,578	3,525,938	5,685,816	6,616,338
Ores and Mine Products	534,458	797,133	245,574	553,781
Other Agricultural and Food	5,792,480	7,547,973	84,016	803,971
Petroleum Products	8,772	35,404	1,953	9,088
Unknown	67	162	0	1,663
Total	72,608,510	74,363,602	7,595,058	11,286,919

<sup>1</sup> Predominantly intermodal

Source: Transport Canada

## TRUCKING TRANSPORTATION

## TRUCK TRAFFIC BY SECTOR

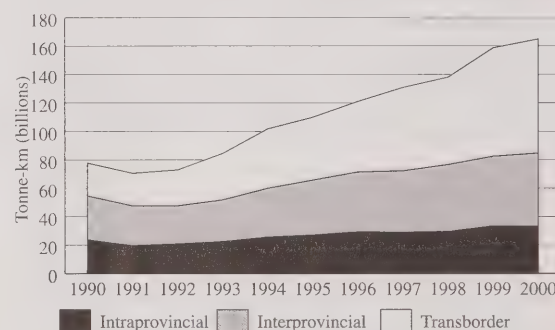
From 1990 to 2000, transborder for-hire trucking<sup>1</sup> traffic to and from the United States rose from 23.1 billion to over 80 billion tonne-kilometres, an average annual growth rate of 13.3 per cent. This rate was three times higher than the rate observed over the same period for domestic trucking activities, which was 4.5 per cent. Over this period, domestic trucking traffic rose from 54.7 billion to 84.7 billion tonne-kilometres.

The increasing importance of trucking in transborder trade activities can be explained by many factors. The deregulation of the trucking industry resulted in improved efficiency; the Canadian currency exchange rate promoted Canada's exports; and a period of strong economic growth in the United States, Canada's most significant trading partner, all contributed to the growth in transborder trucking.

Over 60 per cent of Canada–US trade (in terms of value) moves by truck. The average distance travelled per trip by Canadian-domiciled trucks to and from the United States rose from 925 kilometres to nearly 1,100 kilometres between 1990 and 2000.

Figure 11-2 illustrates the growth in annual for-hire trucking traffic between 1990 to 2000.

FIGURE 11-2: TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1990 – 2000



Source: Statistics Canada, *Trucking in Canada*, Cat. 53-222; Transport Canada

Over the same ten-year period, interprovincial trucking traffic grew an average of 5.3 per cent a year, rising from 31 billion to nearly 52 billion tonne-kilometres, while intraprovincial trucking traffic grew an average of

<sup>1</sup> Including Canadian domiciled long-distance for-hire trucking firms with annual operating revenues of \$1 million or more.

3.3 per cent a year.<sup>2</sup> Ontario dominated in all market segments, with 35 per cent of intraprovincial trucking traffic, 33 per cent of interprovincial trucking traffic and 44 per cent of total transborder traffic hauled by trucks.

Table 11-4 shows total for-hire trucking traffic by market segment and region in 2000.

**TABLE 11-4: FOR-HIRE TRUCK TRAFFIC BY MARKET SEGMENT AND PROVINCE, 2000**

	----- (Billions of tonne-kilometres) -----				
	<i>Intra-provincial</i>	<i>Inter-provincial</i>	<i>Trans-border</i>	<i>Total</i>	<i>Per cent share</i>
Atlantic Provinces	1.66	3.73	4.72	10.10	6.1
Quebec	6.59	9.57	18.83	34.99	21.2
Ontario	11.44	16.88	35.52	63.84	38.7
Manitoba, Saskatchewan and territories	3.05	5.93	5.07	14.05	8.5
Alberta	6.28	9.82	8.64	24.74	15.0
British Columbia	4.10	5.70	7.45	17.25	10.5
<b>Total</b>	<b>33.11</b>	<b>51.63</b>	<b>80.23</b>	<b>164.97</b>	<b>100.0</b>

Notes: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers;  
 "Transborder" includes exports and imports; "Interprovincial" are loadings based;  
 "Territories" includes Yukon, Nunavut and Northwest Territories.

Source: Statistics Canada, special tabulation

Table 11-5 indicates the main international northbound and southbound trucking flows for Canadian-domiciled for-hire carriers. The heaviest traffic flows involved those between Ontario and the US central region and Ontario and the US southern region, with 16.5 billion tonne-kilometres and 10.2 billion tonne-kilometres, respectively.

**TABLE 11-5: INTERNATIONAL FOR-HIRE TRUCK TRAFFIC BY MAJOR FLOWS AND PROVINCE, 2000**

Province	US Region <sup>1</sup>	(Billions of tonne-kilometres)		Per cent Share
		<i>Southbound movements "Exports"</i>	<i>Northbound movements "Imports"</i>	
Ontario	US Central	9.00	7.53	16.53
Ontario	US South	4.89	5.26	10.15
Prairie Provinces	US Central	2.78	2.32	5.11
Quebec	US Central	3.36	1.84	5.21
Quebec	US South	3.34	2.64	5.98
Quebec	US North-East	3.86	1.90	5.76
Ontario	US North-East	2.61	2.06	4.67
Ontario	US West	1.96	2.19	4.16
British Columbia	US West	3.21	1.88	5.09
Prairie Provinces	US West	2.24	1.58	3.82
Prairie Provinces	US South	1.78	1.71	3.49
<b>Sub-total</b>		<b>39.04</b>	<b>30.93</b>	<b>69.96</b>
Other movements		6.44	3.83	10.27
<b>Total</b>		<b>45.48</b>	<b>34.75</b>	<b>80.23</b>

Note: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers.

1 US North East includes New England and Middle Atlantic states.

US Central includes states bordering the Great Lakes and other central states such as North Dakota, South Dakota, Nebraska, Iowa, Kansas and Missouri.

US West includes Pacific states and Western Mountain states.

Source: Transport Canada, adapted from Statistics Canada, special tabulations

## TRUCK TRAFFIC BY COMMODITY

In 2000, five commodity groupings accounted for nearly 80 per cent of total trucking traffic hauled by Canadian-based carriers. Forest and food products each accounted for 31 billion tonne-kilometres of the total volume carried, with a 19 per cent share each, followed by the miscellaneous products category (or end-products) with 29 billion tonne-kilometres, or a 17 per cent share. Manufactured products and steel/alloy products closed out this top-five commodity grouping, with an 11 per cent share each.

Interprovincial traffic totalled 51.6 billion tonne-kilometres, or 65 per cent of total domestic traffic when measured in terms of tonne-kilometres. Food products and miscellaneous commodities (mainly general freight or end-products) captured nearly 50 per cent of this total, followed by forest and paper products, and steel/alloy materials. The average distance per tonne carried interprovincially was 1,025 kilometres in 2000, while intraprovincially the average was 215 kilometres.

Southbound trucking movements (Canadian exports to the United States) exceeded northbound movements, accounting for 45.5 billion tonne-kilometres, or 57 per cent of transborder trucking flows in 2000. Forest and paper products were the main commodities exported by truck, at 12.8 billion tonne-kilometres, followed by food products, steel/alloy materials and automobile products. As for imports, food products dominated, at 6.8 billion tonne-kilometres, miscellaneous products (general freight and end-products) ranked second at 5.8 billion

**TABLE 11-6: FOR-HIRE TRUCKING TRAFFIC BY MARKET SEGMENT AND COMMODITY GROUP, 2000**

SCTG Commodities <sup>1</sup>	----- (Billions of tonne-kilometres) -----			Per cent of total
	<i>Domestic</i>	<i>Transborder</i>	<i>Total</i>	
Forest products	13.95	17.56	31.51	19.1
Food products	17.92	13.55	31.48	19.1
Miscellaneous products	17.48	11.07	28.55	17.3
Other manufactured products	7.76	10.72	18.48	11.2
Steel and alloys products	8.79	9.42	18.22	11.0
Automotive products	1.94	6.56	8.49	5.1
Chemical products	5.44	4.07	9.51	5.8
Petroleum products	5.51	0.54	6.06	3.7
Machinery and equipment	2.69	4.71	7.40	4.5
Ores and non-metallic minerals	3.25	2.03	5.28	3.2
<b>Total All Commodities</b>	<b>84.74</b>	<b>80.23</b>	<b>164.97</b>	<b>100.0</b>

1 Standard Classification of Transported Goods (SCTG) introduced in 1999 for-hire trucking traffic data.

Source: Transport Canada, adapted from Statistics Canada, special tabulation (For-Hire Trucking Commodity Origin/Destination Survey)

2 Intraprovincial trucking traffic is underestimated, as activities of local for-hire carriers, small for-hire carriers (those earning revenues less than \$1 million) and private carriers are not taken into account.

tonne-kilometres, followed by wood and paper products, steel commodities and automobile products.

In 2000, domestic and transborder truck traffic generated revenues of \$7.3 billion and \$6.5 billion, respectively. The same five commodity groupings with the most significant volume of truck activity also dominated in terms of revenues, with over 70 per cent of total trucking revenues. Tables 11-6 and 11-7 show volumes and revenues generated by total for-hire trucking activity by market segment and major commodity groups in 2000.

**TABLE 11-7: FOR-HIRE TRUCKING ACTIVITY REVENUES BY MARKET SEGMENT AND COMMODITY GROUP, 2000**

SCGT Commodities <sup>1</sup>	----- (Billions of dollars) -----			Per cent of total
	Domestic	Transborder	Total	
Miscellaneous products	1.46	0.89	2.35	16.9
Food products	1.37	0.90	2.27	16.4
Forest products	0.89	1.01	1.90	13.7
Other manufactured products	0.94	1.12	2.07	14.9
Steel and alloys products	0.72	0.73	1.45	10.5
Automotive products	0.44	0.81	1.25	9.0
Machinery and equipment	0.48	0.60	1.08	7.8
Chemical products	0.47	0.30	0.78	5.6
Petroleum products	0.39	0.04	0.43	3.1
Ores and non-metallic minerals	0.18	0.10	0.28	2.0
<b>Total All Commodities</b>	<b>7.34</b>	<b>6.52</b>	<b>13.85</b>	<b>100.0</b>

1 Standard Classification of Transported Goods (SCGT) introduced in 1999 for-hire trucking traffic data.

Source: Transport Canada, adapted from Statistics Canada, special tabulation (For-Hire Trucking Commodity Origin/Destination Survey)

## CANADIAN VEHICLE SURVEY

The Canadian Vehicle Survey (CVS) can be used to characterize the Canadian truck fleet for the year 2000.

### VEHICLE FLEET CHARACTERISTICS

Of the 17.3 million in-scope<sup>3</sup> vehicles in the Canadian vehicle fleet in 2000, there were 320,000 mid-size trucks weighing between 4,500 and 15,000 kilograms, and 255,000 heavy trucks weighing over 15,000 kilograms.

Table 11-8 shows statistics for medium and heavy trucks by province for 2000.

Vehicle owners in Ontario and Quebec accounted for about 50 per cent of heavy trucks. The Atlantic region as a whole accounted for 6.3 per cent of the heavy truck fleet, the Prairie Provinces accounted for nearly 37 per cent, and Alberta alone accounted for one quarter of the national heavy truck fleet. British Columbia

**TABLE 11-8: MEDIUM AND HEAVY TRUCK STATISTICS BY PROVINCE/ TERRITORY, 2000**

	----- Medium Truck -----			----- Heavy Truck -----		
	- Registrations -	Average distance driven	(thousands of kilometres)	- Registrations -	Average distance driven	(thousands of kilometres)
	Share (per cent)	Share (per cent)	Share (per cent)	Share (per cent)	Share (per cent)	Share (per cent)
Newfoundland	3.5	1.1	16.3	2.6	1.0	47.0
Prince Edward Island	1.8	0.6	10.4	2.4	0.9	27.4
Nova Scotia	7.9	2.5	22.5	6.9	2.7	73.2
New Brunswick	7.5	2.4	19.5	4.2	1.6	36.7
Quebec	43.7	13.7	29.8	31.7	12.4	111.1
Ontario	69.3	21.7	24.1	97.3	38.1	91.5
Manitoba	9.0	2.8	20.4	10.7	4.2	95.1
Saskatchewan	44.9	14.0	7.1	21.5	8.4	45.8
Alberta	81.8	25.6	14.0	61.4	24.0	73.1
British Columbia	48.0	15.0	18.4	14.6	5.7	55.3
Yukon	1.2	0.4	14.5	0.9	0.4	74.8
Northwest Territories	0.6	0.2	8.7	1.0	0.4	69.2
Nunavut	0.2	0.1	3.2	0.2	0.1	18.0
Canada	319.5	100.0	18.6	255.5	100.0	81.1

Source: Canadian Vehicle Survey, 2000 and Transport Canada calculations

### 1999 NATIONAL ROADSIDE STUDY

The 1999 National Roadside Study was undertaken to produce a profile of the volume and characteristics of truck activity on Canada's major highways. The study provides a unique data set of truck activity statistics by:

- interrelating characteristics of the truck, carrier, driver, cargo and trip;
- measuring characteristics of the truck fleet in actual use (weight, axle spacing, etc.); and
- covering activity by non-Canadian as well as Canadian carriers.

Preparations for the study began in late 1997. The data was collected in the summer and fall of 1999, and analyzed during 2000 and 2001. The results were finalized in the fall of 2001.

The National Roadside Study was a joint effort of federal, provincial and territorial transportation officials, and was coordinated by a Project Group established by the Canadian Council of Motor Transport Administrators (CCMTA). The 1999 study was a follow-up to the national roadside studies coordinated by the CCMTA in 1991 and 1995. New in the 1999 edition was enhanced coverage of activity at border crossings, which was facilitated through participation by US transportation authorities.

Each province and territory collected truck traffic information on its own road network according to the sampling strategy designed for the National Roadside Study. In total, truck traffic was sampled at 238 sites spread across the 25,200 kilometres of roads that are the main components of the highway system used by trucking, including 22 border crossings.

For further details, please consult the Truck Traffic Estimate Software Package at the CCMTA Web site: [www.ccmta.ca/english/index.html](http://www.ccmta.ca/english/index.html).

3 The in-scope vehicle population excludes motorcycles, off-road vehicles (e.g. snowmobiles), trailers, and special equipment such as backhoes, cranes, and snowplows.



accounted for only six per cent of the heavy truck fleet, while the territories accounted for about 0.8 per cent.

Three provinces accounted for over 80 per cent of the total heavy truck vehicle-kilometres: Ontario with 43 per cent of heavy truck vehicle-kilometres, followed by Alberta with over 21 per cent, and Quebec with 17 per cent.

Mid-size trucks were driven, on average, about 18,500 kilometres in 2000, with the highest use found in Quebec, at nearly 30,000 kilometres. Heavy trucks were the most intensively used, with an average of over 80,000 kilometres. Quebec heavy trucks were driven an average of 111,000 kilometres, while Ontario and Manitoba trucks were driven an average of over 90,000 kilometres. Surprisingly, New Brunswick had one of the lowest average uses of its heavy trucks, at fewer than 37,000 kilometres per vehicle.

### Fleet Characteristics by Vehicle Body Type

Over 70 per cent of the in-scope heavy truck fleet registered in 2000 was made up of straight trucks (i.e. tractor and cargo area are a single unit); the remaining 29 per cent was made up of tractor-trailer combinations (tractor is a separate unit from the trailer). Tractor-trailers, with their long average trip lengths, accounted for 17 billion vehicle-kilometres, or nearly 71 per cent of the total vehicle-kilometres by heavy trucks in 2000.

Table 11-9 provides a breakdown of vehicle activity by vehicle body type.

**TABLE 11-9: DISTRIBUTION OF TRUCK ACTIVITY BY VEHICLE CONFIGURATION, 2000**

	<i>Straight Truck</i>	<i>Tractor Trailer</i>
Vehicles (millions)	0.35	0.14
(Per cent of total road vehicles)	2.0	0.8
Vehicle-kilometres (billions)	7.1	17.1
(Per cent of total road vehicles)	2.3	5.5
Litres of fuel (billions)	2.5	7.4
(Per cent of total road vehicles)	5.7	17.2
Average distance driven (thousands of kilometres)	20.2	122.4
Fuel efficiency (L/100km)	34.79	43.14

Source: Canadian Vehicle Survey, 2000 and Transport Canada calculations

The fuel efficiency rate for straight trucks was nearly 35 litres per 100 kilometres, with tractor-trailer combinations the least fuel efficient of all at 43 litres per 100 kilometres.

Table 11-10 analyzes truck vehicle-kilometres by configuration. The most popular configuration for mid-size trucks was the straight truck, with its integrated power unit and cargo area. Straight trucks accounted for over

### E-COMMERCE AND THE CANADIAN TRUCKING INDUSTRY

Electronic commerce or e-commerce is a leading force in redefining business practices in industries around the world. In the context of the trucking industry, e-commerce can be defined as the buying and selling of trucking services through electronic means such as the Internet, email, fax and electronic data interchange.

An earlier study commissioned by Transport Canada entitled "*ITS Applications Within the Canadian Trucking Industry*" completed in November 1999, pointed to the need for a more detailed assessment of where the industry was heading relative to e-commerce.

To address this need, Transport Canada, Industry Canada and the Canadian Trucking Alliance (CTA) jointly undertook to develop a comprehensive assessment divided into two phases:

- Phase 1, A **Needs Assessment**, which provides an understanding of the current use of e-commerce and the related implications for the trucking industry; and
- Phase 2, An information package – made up of a **Handbook** presenting the findings of the Needs Assessment Study in a concise, easy-to-read format and a **Toolkit** providing a step-by-step guide for adopting e-commerce, with useful references to e-commerce portals, journals, and other resources.

A survey of the Canadian trucking industry was conducted during December 2000 and January 2001 and focused on company characteristics, past and present e-commerce experience, future plans, and views on e-commerce potential. Approximately 100 trucking firms across Canada were identified by the CTA for the survey, of which 40 responded.

#### Survey Findings:

- Trucking firms need to adopt e-commerce to maintain their competitiveness.
- The level of e-commerce knowledge is low in small and medium-sized firms which suggests a need to target these firms with educational and training initiatives.
- A small percentage of firms have a Web site mainly for advertising and providing company information. Other areas of e-commerce adoption include order processing and pick-up/dispatching.
- The frequency of e-commerce usage is low. Firms use e-commerce less than 20 per cent of the time for most day-to-day business functions.
- Improved customer satisfaction, followed by increased efficiency, was rated as the most important benefit of using e-commerce.
- The most likely cause of the slow adoption of e-commerce in the Canadian trucking industry is a lack of customer readiness in utilizing these technologies, regardless of availability.

For further details, please refer to the report and the information package, which are available on the Department's Web site: [www.tc.gc.ca/pol/en/report/e-commerce/main.html](http://www.tc.gc.ca/pol/en/report/e-commerce/main.html)

**TABLE 11-10: VEHICLE-KILOMETRES BY TRUCK CONFIGURATION, TEN PROVINCES, 2000**

	----- Medium Truck -----		----- Heavy Truck -----	
	Vehicle-kilometres (billions)	Share (per cent)	Vehicle-kilometres (billions)	Share (per cent)
Straight truck	4.8	81.6	2.6	12.7
Tractor/1 trailer	0.2	3.6	15.5	75.1
Tractor/2 trailers	0.0	0.0	1.2	6.1
Other	0.9	14.7	1.2	6.1
<b>Total</b>	<b>5.9</b>	<b>100.0</b>	<b>20.6</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

80 per cent of the mid-size truck vehicle-kilometres. By contrast, heavy trucks were predominately tractor-trailer combinations with a separate power unit and a separate cargo area. Over 80 per cent of heavy truck vehicle-kilometres were accounted for by various tractor-trailer combinations, with the tractor/one trailer combination the most popular. Tractors pulling two trailers carried out about six per cent of the vehicle-kilometres. Almost 13 per cent of heavy trucks were straight trucks.

Table 11-11 provides a breakdown of the medium and heavy truck fleet in 2000 by age of the vehicle.

**TABLE 11-11: TRUCK CHARACTERISTICS BY AGE OF VEHICLE, 2000**

Age of vehicle	Number of vehicles (thousands)	Share (Per cent)	Vehicle- kilometres (billions)	Average distance driven (thousands of kilometres)	Fuel efficiency (L/100km)
<b>Medium trucks</b>					
Two years or less	66	17.1	1.69	25.5	21.0
Three to five	56	14.6	1.51	26.9	24.2
Six to nine	58	15.1	1.16	19.8	25.8
Ten to thirteen	64	16.5	0.95	14.8	29.0
Fourteen or more	142	36.7	0.60	4.2	37.8
<b>Total</b>	<b>387</b>	<b>100.0</b>	<b>5.91</b>	<b>15.2</b>	<b>25.8</b>
<b>Heavy trucks</b>					
Two years or less	80	30.0	10.70	133.3	42.7
Three to five	51	19.2	5.49	106.7	42.5
Six to nine	38	14.1	1.94	51.3	46.8
Ten to thirteen	41	15.4	1.72	41.9	47.3
Fourteen or more	57	21.3	0.71	12.5	45.6
<b>Total</b>	<b>268</b>	<b>100.0</b>	<b>20.57</b>	<b>76.8</b>	<b>43.5</b>

Source: Canadian Vehicle Survey, 2000 and Transport Canada calculations

Only about one third of the mid-size truck fleet was under six years of age in 2000, but these vehicles were used more intensively than older equipment — about 26,000 kilometres compared with only about 15,000 — and were appreciably more fuel efficient. Average fuel efficiency for mid-size trucks less than six years of age was nearly 25 per cent better (22.5 L/100 km versus 29.6 L/100 km) than for vehicles six years or older.

In 2000, the heavy truck fleet was made up of considerably newer equipment, with nearly half the fleet

less than six years old. These vehicles accounted for 75 per cent of the vehicle-kilometres and were driven much more on average — more than 120,000 kilometres per year, compared with only about 32,000 kilometres for vehicles six years or older. Heavy trucks under six years old were nine per cent more fuel efficient than older vehicles (42.6 litres per 100 kilometres versus 46.8 litres per 100 kilometres).

## TRIP CHARACTERISTICS

Table 11-12 shows estimated vehicle-kilometres by day of the week for medium and heavy trucks in 2000. The CVS results for 2000 indicated a strong weekday usage among mid-size and heavy trucks. In 2000, the busiest day of the week for trucks was Tuesday and the least-busy days were Saturday and Sunday.

**TABLE 11-12: USE OF TRUCKS BY DAY OF THE WEEK, 2000**

	----- Medium Truck -----		----- Heavy Truck -----	
	Vehicle-kilometres (billions)	Share (per cent)	Vehicle-kilometres (billions)	Share (per cent)
Sunday	0.3	4.6	1.3	6.2
Monday	0.9	15.9	3.2	15.4
Tuesday	1.1	19.3	4.0	19.3
Wednesday	1.1	18.3	3.9	18.8
Thursday	1.1	19.0	3.7	18.2
Friday	1.0	16.7	3.2	15.6
Saturday	0.4	6.2	1.3	6.5
<b>Total</b>	<b>5.9</b>	<b>100.0</b>	<b>20.6</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, 2000

Table 11-13 shows vehicle-kilometres by time of day in 2000. About 85 per cent of truck activity in 2000 took place during the day. Truck activity was at its lowest from midnight to 6:00 a.m., with less than five per cent of total vehicle-kilometres made by mid-size trucks and 11 per cent for heavy trucks in this period.

**TABLE 11-13: USE OF TRUCKS BY TIME OF DAY, 2000**

	----- Medium Truck -----		----- Heavy Truck -----	
	Vehicle-kilometres (billions)	Share (per cent)	Vehicle-kilometres (billions)	Share (per cent)
0:00-5:59	0.3	4.6	2.3	11.1
6:00-11:59	2.5	42.7	7.3	35.5
12:00-17:59	2.6	43.7	7.4	36.1
18:00-23:59	0.5	9.0	3.6	17.3
<b>Total</b>	<b>5.9</b>	<b>100.0</b>	<b>20.6</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, 2000

Table 11-14 shows the distribution of vehicle-kilometres by trip length in 2000. Heavy truck activity was overwhelmingly in long-haul activities, with 90 per cent of

use in trip lengths of at least 80 kilometres. About two-thirds of trips by mid-size trucks were over 80 kilometres, while nine per cent of their trips were less than 25 kilometres.

TABLE 11-14: USE OF TRUCKS BY TRIP LENGTH, 2000

	----- Medium Truck -----		----- Heavy Truck -----	
	Vehicle-kilometres (billions)	Share (per cent)	Vehicle-kilometres (billions)	Share (per cent)
0-4 kilometres	0.0	0.7	0.0	0.1
5-24 kilometres	0.5	8.5	0.4	1.9
25-79 kilometres	1.5	25.7	1.6	7.6
80+ kilometres	3.8	65.1	18.6	90.4
Total	5.9	100.0	20.6	100.0

Source: Canadian Vehicle Survey, 2000

Table 11-15 provides estimates of heavy truck vehicle-kilometres by trip purpose in 2000. Heavy trucks were used primarily for hauling goods or equipment, with approximately 75 per cent of the vehicle-kilometres accounted for such activities. Nearly 14 per cent of estimated heavy truck vehicle-kilometres involved pulling an empty trailer, while about six per cent also involved a non-work purpose. In contrast, mid-size trucks were used quite a bit more for non-work purposes, more than 25 per cent in 2000. Approximately one half of the mid-size truck activities involved hauling goods and equipment with empty hauls, accounting for six per cent of vehicle-kilometres. Nearly 12 per cent of vehicle-kilometres took place going to or from service calls.

TABLE 11-15: USE OF TRUCKS BY TRIP PURPOSE, 2000

	----- Medium Truck -----		----- Heavy Truck -----	
	Vehicle-kilometres (billions)	Share (per cent)	Vehicle-kilometres (billions)	Share (per cent)
To/from a service call	0.7	11.6	0.7	3.6
Carrying goods/equipment	3.0	50.0	15.5	75.2
Empty	0.3	5.8	2.8	13.6
Other work purpose	0.3	5.5	0.3	1.3
Non-work purpose	1.6	27.1	1.3	6.3
Total	5.9	100.0	20.6	100.0

Source: Canadian Vehicle Survey, 2000

## MARINE TRANSPORTATION

There are three categories of marine freight traffic in Canada: domestic flows,<sup>4</sup> transborder trade with the United States, and "other" international (deep-sea or overseas) traffic.<sup>5</sup> Marine freight traffic totalled 349 million tonnes<sup>6</sup> in 2000, a 4.7 per cent increase from 1999. Domestic (loading) flows accounted for about one sixth of

this (55.5 million tonnes), a 6.3 per cent higher share than in 1999 (52.2 million tonnes). Of these domestic flows, Canadian-flag vessels carried an overwhelming 98.9 per cent (54.9 million tonnes), while foreign ships handled just 1.1 per cent.

In 2000, Canada-US traffic totalled 105.5 million tonnes, a 3.4 per cent increase over 1999. Of this, Canadian-flag vessels accounted for just over half, at 53.1 per cent, for a total of 56 million tonnes. Overseas traffic increased by five per cent in 2000, reaching 188 million tonnes. Canadian-flag vessels carried only 0.2 per cent of this traffic.

Between 1989 and 2000, total marine flows increased slightly overall. Domestic traffic flows, however, declined by 21 per cent, from a high of 70 million tonnes in 1988 to 55.5 million tonnes in 2000. A shift in grain traffic from Thunder Bay to west coast ports is the main reason for this decline.

Transborder traffic between Canada and the United States in 2000 exceeded the previous high recorded in 1999 by almost 3.4 per cent. Since 1988, marine transborder traffic has increased by 26 per cent. Between 1988 and 2000, overseas (other international) traffic also grew, increasing by 13 per cent. Overseas volumes were five per cent higher in 2000 than in 1999.

Table 11-16 shows trends in Canada's marine traffic statistics, by sector, from 1986 to 2000. Table 11-17 shows the share of Canadian waterborne trade carried by Canadian-flag vessels in 2000.

TABLE 11-16: CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 1986 - 2000

	(Millions of tonnes)			<i>Total Flows</i>	<i>Total Handled</i>
	----- <i>Flows</i> -----				
	<i>Domestic</i>	<i>Transborder</i>	<i>Overseas</i>		
1986	60.5	68.2	138.4	267.1	327.6
1987	67.6	73.2	153.8	294.6	362.2
1988	70.0	83.8	166.2	320.0	390.0
1989	62.0	82.7	156.7	301.4	363.4
1990	60.4	76.2	156.1	292.7	353.1
1991	57.9	67.0	167.2	292.1	350.0
1992	52.3	67.9	155.3	275.5	327.8
1993	50.4	69.9	154.2	274.5	324.9
1994	52.2	78.8	168.1	299.1	351.3
1995	50.4	85.2	174.5	310.1	360.5
1996	48.8	88.5	171.4	308.7	357.5
1997	46.7	94.3	188.4	329.4	376.1
1998	48.3	100.1	179.4	327.8	376.1
1999	52.2	102.0	179.2	333.4	385.6
2000	55.5	105.5	188.1	349.1	404.5

Source: Statistics Canada, Shipping in Canada, Cat. 54-205

4 Maritime traffic that originates from and is destined for a Canadian port. Flows count traffic volume only once, in contrast to port loadings and unloadings, for which, in the case of domestic traffic, approximately the same volumes get counted twice.

5 "Other" international traffic includes shipments to and from foreign countries other than the United States.

6 Based on traffic flows rather than tonnage handled at Canadian ports (domestic volumes are not double counted).



TABLE 11-17: CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 2000

(Millions of tonnes)

Canadian Waterborne Trade	Canadian Flag	Per cent	US Flag	Per cent	Foreign Flag	Per cent	Total Traffic
Domestic	54.9	98.9	0.1	0.2	0.5	0.9	55.5
Canada/US	56.0	53.1	8.0	7.6	41.5	39.3	105.5
Deep-Sea	0.3	0.2	0.2	0.1	187.7	99.8	188.1
<b>Total</b>	<b>111.2</b>	<b>31.8</b>	<b>8.3</b>	<b>2.4</b>	<b>229.7</b>	<b>65.8</b>	<b>349.1</b>

Source: Statistics Canada and Transport Canada

## DOMESTIC FREIGHT TRAFFIC

Because it is loaded and unloaded at Canadian ports, domestic cargo is handled twice within the Canadian port system. Domestic cargo rose 6.3 per cent to 110.9 million tonnes in 2000, when increased shipments of crude petroleum, pulpwood, logs and bolts offset a significant decline in shipments of iron ore, wheat, fuel oil and salt. Domestic marine cargo traffic peaked in 1988 at 139.9 million tonnes and has declined steadily since then. This decline has come partly from changes in the marketplace that have affected Canada's international trade for some commodities. It has also come partly from an improvement in rail's competitiveness with domestic marine services, and partly from the increased importance that shippers have placed on timely delivery.

Table 11-18 shows flows of domestic marine traffic by region in 2000.

TABLE 11-18: MARINE DOMESTIC FLOWS BY CANADIAN REGION, 2000

(Thousands of tonnes)

Region of Origin (Loadings)	----- Region of Destination (Unloadings) -----				All Regions
	Atlantic	St. Lawrence	Great Lakes	Pacific	
Atlantic	9,725	2,248	387	5	12,366
St. Lawrence	922	6,300	5,974	26	13,223
Great Lakes	257	4,640	8,326	0	13,224
Pacific	4	0	0	16,680	16,684
<b>All Regions</b>	<b>10,908</b>	<b>13,189</b>	<b>14,687</b>	<b>16,711</b>	<b>55,496</b>

Source: Statistics Canada. Shipping in Canada, Cat. 54-205

Most domestic traffic passes through the Great Lakes–St. Lawrence Seaway system. In 2000, the ports serving the system handled 54.3 million tonnes (loadings and unloadings), or 49 per cent of the total domestic tonnage. In second place was the Pacific region with 33.4 million tonnes, or 30.1 per cent of the total. Pacific

ports handled 3.9 million tonnes more domestic cargo in 2000 than in 1999, 99.9 per cent of which originated and terminated within that region. Atlantic region ports handled 23.3 million tonnes of domestic cargo in 2000, or 24 per cent more than in 1999. Crude petroleum shipments to the shore-based storage reservoir at Whiffenhead were behind this increase due to increased production at Hibernia, the oil field on the Grand Banks.

The increase in domestic marine freight traffic came mainly from crude petroleum, with 69.1 per cent of the increase, and pulpwood and chips, with 10.5 per cent.

In 2000, the primary commodities handled in the domestic trade across Canada were:

- iron ore and concentrates (13 million tonnes, down 8.4 per cent from 1999);
- crude petroleum (9.9 million tonnes, up 69.1 per cent);
- pulpwood and chips (15.6 million tonnes, up 10.5 per cent);
- fuel oil (9.2 million tonnes, down 6.8 per cent);
- stone, limestone, sand and gravel (14.8 million tonnes, up 3.7 per cent);
- wheat (8.2 million tonnes, down 9.2 per cent).

Together, these commodities represent close to two-thirds of all domestic tonnage handled at Canadian ports in 2000.

In 2000, just over one per cent of Canada's domestic marine traffic was handled by foreign-flag ships,<sup>7</sup> compared with 2.6 per cent in 1999. This level is consistent with historical levels of foreign-flag participation before the ratio increased slightly in the mid-1990s.

Canada Customs and Revenue Agency received 94 new applications for a coasting trade licence in 2001, down from 110 applications in 2000 and 117 in 1999. The Canadian Transportation Agency denied three of these applications, and one was withdrawn. The United States was the predominant foreign flag, with 38 requests (one oil products tanker made nine requests). Offshore oil and gas production and exploration continued to be the area of highest activity for licence requests in 2001, including 14 requests for seismic vessels, five for diving support, four for drill rigs and three for drilling vessels.

7 The *Coasting Trade Act* governs foreign-registered ship activity in Canada's domestic marine shipping. The Act reserves the transportation of passengers, cargoes and marine-related activities in Canadian waters to Canadian-registered duty-paid ships. It also extends this reservation to Canada's continental shelf for activities related to the exploration and exploitation of non-living natural resources. Waivers are permitted to foreign-registered ships to enter Canada's coasting trade when no Canadian ship is available or capable of providing a particular service. Canada Customs and Revenue Agency, through its regional custom's offices, carries out the administration and collection of duties associated with obtaining a coasting trade licence. Duty is payable each month at the rate of 1/120th of 25 per cent of the declared fair market value of the foreign ship while it is involved in a coasting trade activity. There is one exception: as of January 1998, in accordance with the Canada–US Free Trade Agreement, duty is not payable on US-registered ships. The Canadian Transportation Agency determines whether or not a Canadian-registered duty-paid ship is available to perform a particular service. Enforcing the Act remains the responsibility of the Minister of Transport.

Not all approved requests result in the applicant following through in obtaining a licence. As the offshore shifts to more production, the requirement for large-capacity crude oil tankers is increasing. Market conditions also drive where oil goes. In order to be in a position to respond to sudden changes in market conditions, companies often make a number of licence requests to be able to ship larger volumes of Canadian offshore oil to Canadian refineries.

Table 11-19 shows the actual tonnage and percentage of total domestic cargo tonnage carried by foreign registered ships from 1988 to 2000.

**TABLE 11-19: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 – 2000**

Year	Canadian	Per cent	Foreign	Per cent	Total
1988	69,584,300	99.44	389,200	0.56	69,973,500
1989	61,455,700	99.10	560,100	0.90	62,015,800
1990	60,005,700	99.41	354,300	0.59	60,360,000
1991	57,862,300	99.92	48,400	0.08	57,910,700
1992	52,021,600	99.54	240,200	0.46	52,261,800
1993	49,744,300	99.54	231,300	0.46	49,975,600
1994	51,474,100	98.65	703,800	1.35	52,177,900
1995	49,552,400	98.13	945,400	1.87	50,497,800
1996	48,377,762	98.73	623,384	1.27	49,001,146
1997	45,431,820	97.41	1,208,017	2.59	46,639,837
1998	47,301,104	97.93	998,994	2.07	48,300,098
1999	51,549,488	97.41	1,369,314	2.59	52,918,802
2000	54,868,629	98.87	627,067	1.13	55,495,696

Source: Transport Canada, from data supplied by Statistics Canada

## INTERNATIONAL FREIGHT TRAFFIC

Canadian ports handled 293.6 million tonnes of international cargo in 2000, up 4.4 per cent from 1999. Of that total, 63.9 per cent was export-oriented (including in-transit and re-export traffic). Japan, China, South Korea, the United Kingdom and other western European nations accounted for over 60 per cent of Canada's total international marine traffic (exports and imports) in 2000.

## CONFERENCE/NON-CONFERENCE MARKET SHARES

Shipping lines offering scheduled liner services can operate either as a member line of a shipping conference or as an independent (non-conference) line. Non-conference traffic has grown consistently in recent years, both in absolute terms and as a percentage of total liner traffic. Conference traffic remained relatively static

from 1994 to 1997 but was down somewhat in 1998 and more noticeably in 1999. In 2000, conference traffic reversed this trend, with imports up substantially over 1999. This increase was due to the Canada Transpacific Stabilization Agreement (an inbound conference) now being included as a tariff-filing conference.

Non-conference liner traffic was also up in 2000, with independent lines moving nearly twice the amount of tonnage compared with conference carriers. If non-conference US origin/destination transshipped traffic was taken into account, the non-conference share would be even more dominant.<sup>8</sup>

Table 11-20 illustrates the conference and non-conference shares of Canadian liner trade from 1994 to 2000.

**TABLE 11-20: CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 – 2000**

(Millions of tonnes)							
	1994	1995	1996	1997	1998	1999	2000
Conference							
Exports	5.6	5.6	5.9	5.9	5.4	3.8	3.9
Imports	5.0	4.4	4.7	4.3	4.3	4.3	6.8
Total	10.6	10.0	10.6	10.2	9.7	8.1	10.7
Non-conference							
Exports	5.3	6.5	6.8	6.5	8.2	11.4	12.9
Imports	3.6	3.6	3.7	5.3	6.6	6.9	7.3
Total	8.9	10.0	10.5	11.8	14.8	18.3	20.2

Source: Transport Canada, from data supplied by Statistics Canada

The breakdown of liner traffic by foreign region of origin/destination is also useful to illustrate the relative shares of conference and non-conference operators on different routes. Table 11-21 compares conference and non-conference liner traffic by region for 2000. The

**TABLE 11-21: LINER TRAFFIC BY REGION, 2000**

(Millions of tonnes)					
Region	Liner Imports		Liner Exports		Total
	Conference	Non-conference	Conference	Non-conference	
Europe	4.7	2.3	3.9	1.4	12.3
Asia	2.1	2.1	–	8.5	12.7
Central America	–	0.6	–	0.7	1.3
South America	–	0.6	–	0.5	1.2
Other America	–	1.0	–	0.9	1.9
Middle East	–	0.2	–	0.4	0.7
Oceania	–	0.1	–	0.4	0.4
Africa	–	0.3	–	0.2	0.5
<b>Total</b>	<b>6.8</b>	<b>7.3</b>	<b>3.9</b>	<b>12.9</b>	<b>30.9</b>

Note: – means Nil.

Other America = North America plus Greenland and Saint Pierre and Miquelon

Source: Transport Canada, from data supplied by Statistics Canada

<sup>8</sup> It is important to note that the data in the tables are not adjusted for US transshipments moving through Canadian ports. Much of this traffic moves on conference vessels but at non-conference rates. The route between Europe and Canada is most likely affected by these transshipments. Montreal estimates that approximately 50 per cent of its liner traffic originates in or is destined for the United States. In addition, Halifax is handling growing amounts of US Midwest traffic. These transshipments affect the balance between conference/non-conference traffic further in favour of the independent operators.

increase in conference traffic in 2000 is due largely to an increase in conference carryings in the Asian trades.

In 2000, conference operators tended to concentrate almost exclusively on containerized traffic in terms of the type of cargo carried, which is consistent with the pattern in past years. In fact, 10.5 million tonnes out of the total of 10.7 million tonnes carried moved in containers. Non-conference traffic is also characterized by a large percentage of cargo in containers (63 per cent in 2000), but includes significant amounts of general cargo and neobulk traffic as well.

## CANADA-US TRANSBORDER FREIGHT TRAFFIC

Canada's marine traffic to and from the United States has increased by over 25 per cent between 1988 and 2000. Transborder traffic reached 105.5 million tonnes in 2000, up 3.4 per cent from 1999. Compared with the previous year, exports (loadings to US destinations)<sup>9</sup> grew by four per cent in 2000, while imports (unloadings) increased by 2.6 per cent.

Table 11-22 shows Canada's maritime trade with the United States from 1986 to 2000.

**TABLE 11-22: CANADA'S MARITIME TRADE WITH THE US, 1986 – 2000**

	(Millions of tonnes)		
	<i>Loaded</i>	<i>Unloaded</i>	<i>Total</i>
1986	36.8	31.4	68.2
1987	39.8	33.5	73.3
1988	47.0	36.8	83.8
1989	43.4	39.3	82.7
1990	43.1	33.2	76.3
1991	36.8	30.2	67.0
1992	35.9	32.0	67.9
1993	42.1	27.8	69.9
1994	49.5	29.3	78.8
1995	49.9	35.3	85.2
1996	52.4	36.1	88.5
1997	56.9	37.4	94.3
1998	58.9	41.2	100.1
1999	59.7	42.3	102.0
2000	62.1	43.4	105.5

Source: Statistics Canada, Cat. 54-205; Transport Canada

## Exports

In 2000, loadings at Canadian ports destined to the United States totalled 62.1 million tonnes. Seven commodities accounted for 78 per cent of this volume, including 12.4 million tonnes of crude petroleum; 9.6 million tonnes of iron ore; nine million tonnes of stone, limestone, sand and gravel; 5.3 million tonnes of fuel oil;

4.5 million tonnes of gasoline; 4.1 million tonnes of gypsum; and 3.4 million tonnes of salt.

Compared with 1999, there were some significant changes in the volumes of major commodities exported in 2000 to the United States. Crude petroleum exports jumped by 36 per cent, while iron ore exports, and stone, sand and gravel exports increased by 15.3 and 19.7 per cent, respectively. In contrast, gypsum exports decreased by 40.7 per cent, while salt exports decreased by 6.7 per cent.

In 2000, there were two main flow corridors: the Canadian Atlantic to the US Atlantic route, and the Canadian Great Lakes to the US Great Lakes route. The Atlantic route carried 28.8 million tonnes, or 46 per cent of total loadings to the United States, while the Great Lakes route carried 12.5 million tonnes, or 20 per cent of total loadings. These two routes accounted for two thirds of Canada's commodities traffic volumes shipped to the United States using marine transport services.

Table 11-23 shows traffic flows from Canada to the United States in 2000.

**TABLE 11-23: CANADA'S MARINE TRAFFIC TO THE US, 2000**  
(Millions of tonnes)

<i>Canadian Region of Origin</i>	<i>US Region of Destination</i>			<i>Total</i>
	<i>US Atlantic</i>	<i>US Great Lakes</i>	<i>US Pacific</i>	
Atlantic	28.8	0.1	0.3	29.2
St. Lawrence	6.0	5.5	0.0	11.5
Great Lakes	0.1	12.5	0.0	12.5
Pacific	0.4	0.0	8.4	8.8
<b>Total</b>	<b>35.2</b>	<b>18.1</b>	<b>8.8</b>	<b>62.1</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada

## Imports

US marine shipments destined for Canada increased by 2.6 per cent from 42.3 million tonnes in 1999 to 43.4 million tonnes in 2000. Seven commodities accounted for more than four fifths of this volume, including: 20 million tonnes of coal; 6.4 million tonnes of iron ore; 3.4 million tonnes of stone, limestone, sand and gravel; 2.1 million tonnes of other petroleum products; 1.9 million tonnes of fuel oil; 1.2 million tonnes of soybeans; and 0.9 million tonnes of corn.

As was the case with exports, there were some significant differences at the commodity level in the volumes of marine imports from the United States between 1999 and 2000. Imports of coal and other petroleum

<sup>9</sup> Including in-transit and transshipment cargo.



products went up 8.3 and 20.4 per cent, respectively; while shipments of fuel oil, soybeans and corn dropped by 11.6, 15.3 and 49.8 per cent, respectively.

More than three quarters of the total volume of all marine imports from the United States originated at ports on the Great Lakes. Ports along the US Atlantic and the Gulf of Mexico accounted for 15.2 per cent, and US Pacific ports made up the remaining 6.7 per cent.

Table 11-24 shows the traffic flow from US to Canadian ports in 2000.

**TABLE 11-24: CANADA'S MARINE TRAFFIC FROM THE US, 2000**

	(Millions of tonnes)			
	US Region of Origin			
Canadian Region of Destination	US Atlantic	US Great Lakes	US Pacific	Total
Atlantic	2.3	0.4	0.0	2.7
St. Lawrence	3.5	3.4	0.3	7.1
Great Lakes	0.3	30.2	0.0	30.6
Pacific	0.5	0.0	2.6	3.1
<b>Total</b>	<b>6.6</b>	<b>34.0</b>	<b>2.9</b>	<b>43.4</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada

## OVERSEAS FREIGHT TRAFFIC

Canada's marine trade with overseas countries (excluding the United States) totalled 188 million tonnes in 2000, a five per cent increase from 1999. More of this volume moved as exports than imports. Approximately 61 per cent of overseas exports were loaded at west coast ports, while 89 per cent of overseas imports were unloaded at east coast ports.

Table 11-25 shows Canada's maritime overseas trade from 1986 to 2000.

**TABLE 11-25: CANADA'S MARITIME OVERSEAS TRADE, 1986 – 2000**

	(Millions of tonnes)		
	<i>Loaded</i>	<i>Unloaded</i>	<i>Total</i>
1986	107.8	30.6	138.4
1987	119.2	34.6	153.8
1988	124.1	42.1	166.2
1989	115.7	41.0	156.7
1990	116.0	40.1	156.1
1991	131.3	35.9	167.2
1992	118.0	37.3	155.3
1993	110.4	43.8	154.2
1994	120.5	47.6	168.1
1995	126.6	47.9	174.5
1996	121.9	49.5	171.4
1997	131.1	57.3	188.4
1998	120.2	59.2	179.4
1999	119.9	59.3	179.2
2000	125.6	62.5	188.1

Source: Statistics Canada, Cat. 54-205; Transport Canada

## Exports

In 2000, 125.6 million tonnes of cargo were loaded at Canadian ports to be shipped to non-US countries, 4.8 per cent more than in 1999. The major commodities shipped from Canada included: 30.3 million tonnes of coal; 20.2 million tonnes of iron ore; 16.7 million tonnes of wheat; 13.5 million tonnes of containerized freight; 6.3 million tonnes of woodpulp; 5.5 million tonnes of sulphur; and 4.7 million tonnes of potash. Slightly more than one tenth of this traffic was containerized.

Wheat, potash and iron ore shipments showed significant increases in 2000 over 1999. Wheat shipments increased by 20.6 per cent, potash by 8.5 per cent, and iron ore by 2.8 per cent. Coal shipments, however, decreased by 4.6 per cent.

Three fifths of Canada's total marine exports to overseas destinations in 2000 were loaded at ports in western Canada. The ports along the St. Lawrence Seaway system handled most of the loading for ports in eastern Canada. Western ports dominated the tonnage shipped on the Asia and Oceania trade routes with 67 per cent, while the eastern ports handled 61 per cent of the tonnage shipped to Europe.

Table 11-26 shows Canada's marine traffic to overseas destinations in 2000.

**TABLE 11-26: CANADA'S MARINE TRAFFIC TO OVERSEAS, 2000**

	(Millions of tonnes)		
	Canadian Region of Origin		
Foreign Region of Destination	Eastern Ports	Western Ports	Total
Asia and Oceania	5.9	51.6	57.5
Europe	29.6	9.1	38.7
South and Central America	5.4	9.4	14.7
Middle East and Africa	5.1	6.7	11.7
Unknown	2.7	0.2	2.9
<b>Total</b>	<b>48.7</b>	<b>77.0</b>	<b>125.6</b>

Note: Table may not add up due to rounding

Source: Statistics Canada, Cat. 54-205; Transport Canada

## Imports

Canadian ports unloaded 62.5 million tonnes of marine shipments from overseas origins in 2000, 5.4 per cent more than in 1999. Crude petroleum<sup>10</sup> imports totalled 29 million tonnes, or 47 per cent of all marine traffic unloaded from offshore origins. Other major commodities unloaded included: 10.2 million tonnes of containerized freight; 4.6 million tonnes of iron and steel; 2.8 million tonnes of alumina and bauxite; 2.6 million tonnes of coal;

<sup>10</sup> Including transshipment of North Sea crude petroleum.

and two million tonnes of fuel oil. More than 16 per cent of this inbound traffic was containerized.

In addition, more than 88 per cent of overseas shipments were unloaded at ports in eastern Canada. Overseas cargo originated mainly from Europe, the Middle East and Africa.

Table 11-27 shows Canada's marine traffic from overseas markets in 2000.

**TABLE 11-27: CANADA'S MARINE TRAFFIC FROM OVERSEAS, 2000**

(Millions of tonnes)

<i>Foreign Region of Origin</i>	<i>Canadian Region of Destination</i>		<i>Total</i>
	<i>Eastern Ports</i>	<i>Western Ports</i>	
Europe	24.7	0.3	25.0
Middle East and Africa	13.3	0.2	13.5
South and Central America	9.9	0.9	10.8
Asia and Oceania	4.0	5.5	9.5
Unknown	3.6	0.1	3.7
<b>Total</b>	<b>55.5</b>	<b>7.0</b>	<b>62.5</b>

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

available on activity by regional and local cargo carriers, which are not required to file cargo carriage data.

In addition, there are ten operators in Canada dedicated to providing air cargo service. Their combined fleet of 50 large jet aircraft operates for couriers, freight forwarders, consolidators and shippers (see Table 10-17 for a list of these operators). The combined revenue of these operators for domestic and Canada-US transborder air cargo services is approximately \$300 million.

## DOMESTIC SERVICES

Broken down by sector, Table 11-28 shows the volume of goods that Canadian air carriers transported on all-cargo air services from 1993 to 2000. There was very little change in the total tonnes of air cargo carried between 1999 and 2000. The number of tonnes carried domestically dropped by 0.6 per cent to 517,741 tonnes, accounting for 61 per cent of the total tonnes carried in 2000. During the same period, transborder air cargo tonnage increased by 10.5 per cent, and the number of tonnes carried internationally rose by 0.3 per cent.

**TABLE 11-28: GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 - 2000**

(Tonnes)

<i>Year</i>	<i>Domestic</i>	<i>Transborder</i>	<i>Other International</i>	<i>Total</i>
1993	401,430	68,617	154,514	624,561
1994	424,585	59,758	169,102	653,445
1995	427,156	81,699	183,724	692,579
1996	449,817	80,293	195,737	725,847
1997	513,928	77,387	222,452	813,767
1998	500,606	94,176	233,911	828,693
1999	521,043	90,584	234,547	846,174
2000 <sup>1</sup>	517,741	100,060	235,309	853,110

Note: For 1995 to 1999, Levels I-III carriers; for 1993 and 1994, Levels I-IV carriers.

<sup>1</sup> Preliminary data for 2000.

Source: Statistics Canada, Cat. 51-206 and internal database

## AIR TRANSPORTATION

### AIR CARGO

Because it is deregulated, domestic air cargo has no restrictions on routing, capacity or price. Air cargo travels in the belly-hold of passenger aircraft, in passenger/cargo combination or in all-cargo aircraft. Transborder and international air cargo services are covered by a framework of bilateral air agreements, international agreements and national policies. Canada acquires the international all-cargo rights for scheduled air services through bilateral negotiations. The Minister of Transport has the right to choose which Canadian operators exercise those rights.

Air Canada, which operates the only comprehensive national network of scheduled air services, provides its air cargo service as part of its scheduled passenger air services. During 2001, cargo revenue generated six per cent of Air Canada's total revenues.

Air NorTerra and First Air also operate air cargo as part of their scheduled air services. These operators of large jet aircraft, along with numerous small operators, provide a vital transportation service in the north, where an alternative is often not available. There is no data

By sector from 1993 to 2000, Table 11-29 shows the operating revenues generated by goods carried on Canadian air carriers' all-cargo services. Between 1999 and 2000, total cargo operating revenues decreased by 11.2 per cent. During the same period, domestic revenues decreased by 8.8 per cent to \$754 million. In 2000, domestic revenues accounted for 71 per cent of total cargo operating revenues. Between 1999 and 2000, international revenues decreased by 16.5 per cent.

**TABLE 11-29: OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 – 2000**

(Millions of dollars)			
Year	Domestic	International <sup>1</sup>	Total
1993	588.8	224.9	813.7
1994	562.7	296.4	859.1
1995	694.2	292.3	986.5
1996	655.3	350.5	1,005.7
1997	709.0	357.3	1,066.3
1998	762.0	347.7	1,109.7
1999	827.1	369.2	1,196.3
2000 <sup>2</sup>	754.0	308.3	1,062.3

<sup>1</sup> Includes transborder and other international.

<sup>2</sup> Preliminary data.

Source: Statistics Canada, Cat. 51-206

## CANADA-US TRANSBORDER SERVICES

Air cargo trade between Canada and the United States registered an average annual growth of ten per cent from 1997 to 2001, rising from \$29.1 billion to \$42.9 billion. This growth was fueled largely by exports, which nearly doubled in value from \$12 billion to \$22 billion over the period. The growth rate in air cargo transport was also larger than the average seven per cent increase for total Canada-US trade over the same period. As a result, air cargo's share of total Canada-US trade reached a peak of 8.1 per cent in 2000.

In addition, air exports and imports were roughly in balance in 2001, with between \$21 and \$22 billion in each sector. The main commodities shipped to the United States by air were "electrical/electronic machinery material" products at \$7.2 billion, followed by "other machinery and equipment" products at \$4.5 billion. These two groups registered an average combined growth of 28 per cent from 1997 to 2000. A third group composed of a variety of manufactured goods (mainly transportation material and high-value aircraft equipment) stood at \$11.5 billion.

The same product groups also drove air imports from the United States. "Electrical/electronic machinery material" products came first at \$8.4 billion, followed by "manufactured — transportation equipment" products at \$6.7 billion, and "other machinery and equipment" products at \$5.8 billion. In both exports and imports, these commodity groups represented over 90 per cent of all Canada-US airborne trade.

The year 2001, however, was marked with a pause in economic growth. Early in the year, the US economy began to slow down. This slowdown was amplified by the September 11 terrorist attacks, which crippled the air industry for a short period of time. As a result, for the first time in 10 years, Canada-US air trade declined in value by 10 per cent, from \$48 billion to \$43 billion.

Table 11-30 shows the air mode's performance in Canada's trade with the United States and other countries from 1997 to 2001. Figure 11-3 illustrates the monthly variations in Canada-US air trade over the last two years.

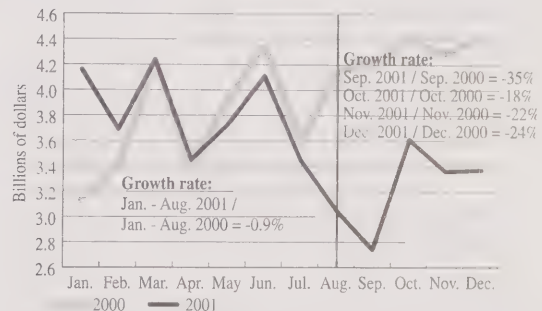
**TABLE 11-30: VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1997 – 2001**

(Billions of dollars)					
	Air Exports <sup>1</sup>	Air Imports	Air Total	All Modes Total	Air Share (per cent)
<b>Canada/US</b>					
1997	12.2	16.9	29.1	428.2	6.8
1998	14.0	18.7	32.7	473.5	6.9
1999	17.5	20.2	37.7	523.5	7.2
2000	23.8	23.6	47.5	588.9	8.1
2001 <sup>2</sup>	21.8	21.1	42.9	569.9	7.5
<b>Canada/Other countries</b>					
1997	8.9	19.5	28.4	142.7	19.9
1998	9.5	20.7	30.2	143.5	21.1
1999	9.8	24.4	34.1	151.6	22.5
2000	12.2	30.2	42.4	180.8	23.5
2001 <sup>2</sup>	12.4	27.4	39.8	175.6	22.7

<sup>1</sup> Includes domestic exports and re-exports

<sup>2</sup> 2001 preliminary data

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations for exports

**FIGURE 11-3: CANADA/US AIR TRADE, VALUE OF GOODS CARRIED, 2000 – 2001**

Note: Total air exports and imports

Source: Transport Canada adapted from Statistics Canada, International Trade Division special tabulations

## OTHER INTERNATIONAL SERVICES

Canada's air trade with countries other than the United States grew at an average rate of nine per cent from 1997 to 2001, soaring from \$28.4 billion to \$39.8 billion. This rate was larger than the average annual growth of five per cent in total trade between Canada and countries other than the United States over the same period. Consequently, the air mode's share of the total value of trade with other countries rose from 19.9 per cent to almost 23 per cent.



As Table 11-30 shows, Canada's air trade with other countries in 2001 was import-oriented. Imports accounted for \$27 billion, more than twice the value of exports at \$12 billion. Main air imports to Canada from other countries were "electrical/electronic machinery material" products at \$11.1 billion, followed by "various manufactured goods — transportation and high-valued aircraft equipment" products at \$8.7 billion, and "other machinery and equipment" products at \$6.2 billion. The same commodity groupings dominated on the export side.

Eighty-five per cent of goods shipped by air had eastern provinces as origins or destinations. As expected, the United States, countries in western Europe, and countries in Asia were the main markets to which Canada shipped using the air mode.

In 2001, Canada's air imports from other countries were affected by an economic slowdown in industrialized economies, declining by almost ten per cent (from \$30.2 billion to \$27.4 billion) from 2000. Exports remained at \$12 billion, maintaining the previous year's level.

Tables 11-31 and 11-32 show the main origins and destinations for Canada's air trade in 2000. Figure 11-4 indicates the monthly variations in Canada's air trade with countries other than the United States during the last two years.

**TABLE 11-31: TOTAL AIR EXPORTS BY MAIN DESTINATIONS, 2000**

Destinations	----- (Billions of dollars) -----			
	Province of Origin		Air Exports	Total (per cent)
	Eastern Provinces <sup>1</sup>	Western Provinces <sup>1</sup>		
United States	20.6	3.3	23.8	66.1
Western Europe	6.5	1.2	7.7	21.4
Asian Countries	1.7	0.6	2.4	6.6
Other Countries	1.8	0.4	2.1	5.9
<b>Total Exports by Air</b>	<b>30.6</b>	<b>5.5</b>	<b>36.1</b>	<b>100.0</b>

<sup>1</sup> Including domestic exports and re-exports; eastern provinces include Ontario, Quebec and Atlantic provinces; western provinces include British Columbia, Prairies, and territories.

Source: Statistics Canada, Cat. 65-202 and special tabulations

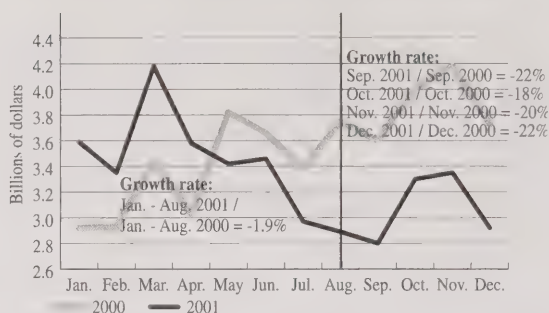
**TABLE 11-32: TOTAL AIR IMPORTS BY MAIN REGIONS OF ORIGIN, 2000**

Origins	----- (Billions of dollars) -----			
	Province of Clearance		Total Air Imports	Total (per cent)
	Eastern Provinces <sup>1</sup>	Western Provinces <sup>1</sup>		
United States	19.2	4.5	23.6	43.9
Western Europe	12.3	1.1	13.4	24.9
Asian Countries	10.0	1.6	11.6	21.6
Latin American Countries	1.2	0.3	1.5	2.8
Other Countries	3.1	0.6	3.7	6.9
<b>Total Imports by Air</b>	<b>45.9</b>	<b>8.0</b>	<b>53.9</b>	<b>100.0</b>

<sup>1</sup> Eastern provinces include Ontario, Quebec and Atlantic provinces; western provinces include British Columbia, Prairies, and territories.

Source: Statistics Canada, Cat. 65-203 and special tabulations

**FIGURE 11-4: CANADA/OTHER COUNTRIES AIR TRADE, VALUE OF GOODS CARRIED, 2000 – 2001**



Note: Total air exports and imports

Source: Transport Canada adapted from Statistics Canada, International Trade Division, special tabulations

# PASSENGER TRANSPORTATION 12

*Passenger transportation volumes are linked to overall economic activity.  
The automobile is by far the most significant means used by Canadians  
to satisfy their personal travel needs.*

Canadians rely on the different modes of the transportation system — air, ship, rail and road, including passenger vehicles and scheduled urban and intercity transit — for their personal travel needs. This chapter presents an overview of passenger transportation in Canada.

## RAIL TRANSPORTATION

### RAIL PASSENGER TRAFFIC

Class I and II intercity passenger traffic increased by almost five per cent to 4.3 million in 2000. VIA Rail carried almost 92 per cent of all passengers, while Algoma Central Railway, BC Rail, Ontario Northland, and the North Shore & Labrador Railway in Quebec carried the remaining eight per cent.

In 2000, passenger-kilometres rose slightly to 1.61 billion. VIA Rail's output increased by 1.2 per cent and the Class II railways' output increased by 0.9 per cent.

**TABLE 12-1: PASSENGER AND PASSENGER-KILOMETRES  
FOR VIA RAIL AND CLASS II CARRIERS,  
1996 – 2000**

<i>Passengers Carried</i>	<i>VIA Rail</i>	<i>Class II</i>	<i>Total</i>
1996	3,666,000	323,405	3,989,405
1997	3,764,983	339,196	4,104,179
1998	3,646,000	334,280	3,980,280
1999	3,757,000	345,874	4,102,874
2000	3,957,000	347,821	4,304,821
<i>Passenger-Kilometres</i>	<i>VIA Rail</i>	<i>Class II</i>	<i>Total</i>
1996	1,436,197,898	77,137,263	1,513,335,161
1997	1,423,479,252	91,113,448	1,514,592,700
1998	1,377,598,464	80,233,805	1,457,832,269
1999	1,498,299,264	93,978,663	1,592,277,927
2000	1,516,002,048	94,829,218	1,610,831,266

Source: Transport Canada

Table 12-1 shows the relative increases in the number of passengers and passenger-kilometres.

Because of the events of September 11 and the increase in rail passenger traffic that followed, aggregate figures for 2001 are expected to rise. For example, VIA Rail carried up to 40 per cent more passengers in central Canada and up to 70 per cent more in Atlantic Canada during the first week after September 11.

Commuter rail traffic in Vancouver, Montreal and Toronto increased by 6.8 per cent from 1999 to 2000. Traffic decreased slightly in 2001, which reflects decreases in Toronto's GO Transit and Vancouver's West Coast Express riderships. Toronto's GO Transit was the dominant commuter rail provider carrying 70 per cent of all commuter rail passengers in 2000 and 2001.

Table 12-2 shows the commuter passenger traffic for Canada's three largest cities from 1994 to 2001.

**TABLE 12-2: COMMUTER RAIL PASSENGERS IN TORONTO,  
MONTREAL AND VANCOUVER, 1994 – 2001**

<i>Year</i>	<i>Commuter rail passengers (thousands)</i>
1994	31,263
1995	29,559
1996	33,313
1997	37,091
1998	40,769
1999	43,914
2000	46,919
2001	46,785

Source: GO Transit, West Coast Express, Agence métropolitaine de transport (AMT)

# BUS TRANSPORTATION

## CANADIAN VEHICLE SURVEY

Of the 17.3 million vehicles in the Canadian vehicle fleet in 2000, more than 74,000 were buses. Table 12-3 shows bus distribution, vehicle-kilometres and average distance driven by province in 2000. The average bus in Canada was driven 25,500 kilometres, with the highest use taking place in Ontario, Quebec and the Yukon.

TABLE 12-3: BUS STATISTICS BY PROVINCE/TERRITORY, 2000

Province	Bus registrations (Thousands)	Share (Per cent)	Vehicle-kilometres (Billions)	Share (Per cent)	Average distance driven (Thousands of kilometres)
Newfoundland	1.29	1.74	0.02	0.85	12.48
Prince Edward Island	0.06	0.08	0.00	0.02	5.26
Nova Scotia	1.80	2.43	0.04	2.12	222.65
New Brunswick	1.89	2.55	0.03	1.80	18.01
Quebec	15.91	21.47	0.46	24.17	28.74
Ontario	26.13	35.26	0.72	38.07	27.56
Manitoba	3.45	4.65	0.06	3.22	17.67
Saskatchewan	3.79	5.11	0.09	4.65	23.22
Alberta	11.39	15.37	0.30	16.03	26.63
British Columbia	8.13	10.97	0.16	8.58	19.98
Yukon	0.23	0.31	0.01	0.44	36.36
Northwest Territories	0.05	0.06	0.00	0.04	14.89
Nunavut	0.00	0.01	-	-	-
<b>Canada</b>	<b>74.11</b>	<b>100.00</b>	<b>1.89</b>	<b>100.00</b>	<b>25.53</b>

Source: Canadian Vehicle Survey, Statistics Canada

Table 12-4 gives an overview of total bus activity for all provinces in 2000. Buses accounted for 1.4 per cent of total fuel purchased and had a fuel efficiency rate of 32.5 litres per 100 kilometres.

TABLE 12-4: DISTRIBUTION OF BUS ACTIVITY, 2000

	Total	Per cent of total Road Vehicle Fleet
Vehicles (millions)	0.07	0.4
Vehicle-kilometres (billions)	1.8	0.6
Passenger-kilometres (billions)	29.1	5.8
Litres of fuel (billions)	0.6	1.4
Distance driven (thousands of kilometres)	24.2	
Persons per vehicle	16.08	
Fuel efficiency (L/100km)	32.46	

Source: Canadian Vehicle Survey, Statistics Canada

Table 12-5 presents bus activity in 2000 by the type of operation. School buses account for nearly 50 per cent of total vehicle-kilometres and over 60 per cent of total passenger-kilometres. Urban transit accounted for over 25 per cent of vehicle-kilometres (urban transit was not asked to record passenger-kilometres data), with charter

TABLE 12-5: BUS ACTIVITY BY TYPE OF OPERATION, 2000

	Vehicle-kilometres Share (billions)	(per cent)	Passenger-kilometres Share (billions)(per cent)	Persons per vehicle
Scheduled Urban	0.5	27.2	-	0.0
Scheduled Intercity	0.1	5.0	1.8	6.0
School	0.9	46.7	18.2	61.0
Charter	0.2	10.4	6.5	21.9
Other	0.2	10.8	3.3	11.1
<b>Total</b>	<b>1.9</b>	<b>100.0</b>	<b>29.8</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada

and other busing accounting for a further 20 per cent. Intercity highway activity was less than 100 million vehicle-kilometres and 1.8 billion passenger-kilometres, approximately five per cent of total bus activity. Bus occupancy rates averaged about 16 passengers per bus, with the highest occupancies found in charter activity, at 33 passengers per bus. Intercity and school buses averaged about 20 passengers per bus.

Table 12-6 compares characteristics of the bus fleet in 2000 by vehicle age. About 38 per cent of the bus fleet in 2000 was under six years of age; these vehicles accounted for about 50 per cent of vehicle-kilometres. Newer vehicles were driven about 65 per cent more on average in 2000 than older buses (33,000 kilometres versus 20,000 kilometres) and were over 16 per cent more fuel-efficient (28.5 litres per 100 kilometres versus 34.2 litres per 100 kilometres).

TABLE 12-6: BUS CHARACTERISTICS BY AGE OF VEHICLE, 2000

Bus Age	Vehicle Count (thousands)	Share (per cent)	Vehicle- kilometres (billions)	Distance Driven (thousands of kilometres)	Fuel Efficiency (L/100km)
Two years or less	15	19.6	0.42	28.2	29.1
Three to five	14	17.9	0.51	37.1	28.1
Six to nine	18	23.5	0.45	25.1	28.8
Ten to thirteen	17	22.6	0.28	15.9	37.6
Fourteen or more	13	16.5	0.22	17.0	41.2
<b>Total</b>	<b>77</b>	<b>100</b>	<b>1.88</b>	<b>24.5</b>	<b>31.4</b>

Source: Canadian Vehicle Survey, Statistics Canada

## DRIVER AND TRIP CHARACTERISTICS

Table 12-8 shows estimated bus vehicle-kilometres by day of the week for 2000. Buses, with the relative importance of urban transit and school buses, displayed a strong weekday pattern, with only a little over ten per cent of activity accounted for on weekends.



**EVENTS OF SEPTEMBER 11, 2001**

The events of September 11, 2001, had a direct impact on both scheduled and charter bus operators. While scheduled operators generally reported brief increases in ridership immediately after September 11, charter operators generally reported cancellations and significant declines in inbound tourism.

The international travel data shows a significant drop both in entries from the United States by bus and in arrivals from key overseas points of origin from September to November 2001. These declines affected the high-end charter bus sector, which serves inbound tourism from overseas and provides return tours from Canada to points in the United States.

Table 12-7 compares the drop in in-bound traffic from September to November in 2000 and 2001.

**TABLE 12-7: SELECTED IN-BOUND TRAFFIC INDICATORS, SEPTEMBER – NOVEMBER 2001 COMPARED WITH 2000**

Indicator	September			October			November		
	2000 (thousands)	2001 (thousands)	Change (per cent)	2000 (thousands)	2001 (thousands)	Change (per cent)	2000 (thousands)	2001 (thousands)	Change (per cent)
Canadians returning from the United States by bus	118	90	(23.4)	132	80	(39.8)	104	76	(22.6)
Entry from:									
Asia	167	114	(31.7)	121	74	(39.2)	73	47	(34.8)
Europe	339	274	(19.3)	191	152	(20.3)	99	80	(19.4)

Source: Statistics Canada Cat. 66-001, International Travel, Vol. 17, nos. 9-11

**TABLE 12-8: BUS USE BY DAY OF THE WEEK, 2000**

	Vehicle-kilometres	
	(billions)	Share (per cent)
Sunday	0.1	5.2
Monday	0.3	16.4
Tuesday	0.3	17.8
Wednesday	0.4	18.9
Thursday	0.3	18.5
Friday	0.3	17.6
Saturday	0.1	5.5
<b>Total</b>	<b>1.9</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada

Table 12-9 presents bus vehicle-kilometres by time of day in 2000. Over 85 per cent of bus travel took place between 6:00 a.m. and 6:00 p.m.

**TABLE 12-9: BUS USE BY TIME OF DAY, 2000**

Time of day	Vehicle-kilometres	
	(billions)	Share (per cent)
0:00-5:59	0.1	3.9
6:00-11:59	0.8	43.1
12:00-17:59	0.8	42.6
18:00-23:59	0.2	10.4
<b>Total</b>	<b>1.9</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada

Table 12-10 shows the distribution of bus vehicle-kilometres by trip length in 2000. More than 60 per cent of total bus trips were at least 80 kilometres in 2000, demonstrating that buses are used mainly for long-haul operations.

**TABLE 12-10: VEHICLE USE BY TRIP LENGTH, 2000**

Trip length	Vehicle-kilometres	
	(billions)	Share (per cent)
0-4 kilometres	0.0	0.1
5-24 kilometres	0.1	5.5
25-79 kilometres	0.6	33.6
80+ kilometres	1.1	60.9
<b>Total</b>	<b>1.9</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada

**INTERCITY BUS SERVICE**

The intercity bus industry is a key component of the Canadian intercity commercial transportation network. The country's extensive road network allows motor coaches to provide a very broad and flexible range of services. Scheduled intercity carriers log more than 150 million kilometres annually and link many towns and villages to urban centres.

**SCHEDULED INTERCITY BUS SERVICE**

Table 12-11 presents the revenues of scheduled intercity bus activities by service line from 1995 to 2000. After a decline from 1996 to 1999, revenues increased by 14.7 per cent in 2000 to \$270.5 million. School bus operators accounted for 60 per cent of total revenues of scheduled intercity services in 2000.

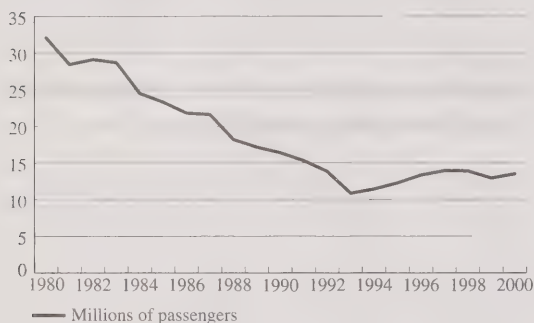
The number of passengers who use scheduled intercity services has been declining steadily since the late 1970s. (This decline is due in part to a reclassification of some intercity activities to urban transit services.) As Figure 12-1 shows, ridership in recent years has been stable, ranging from 12 to 14 million passengers a year. After the decline

**TABLE 12-11: SCHEDULED INTERCITY REVENUES, BY SERVICE LINE, 1995 – 2000**

	(Millions of dollars)					
	1995	1996	1997	1998	1999	2000
Scheduled Intercity	207.9	193.5	189.3	82.5	65.9	72.8
School Bus	24.6	29.5	17.6	123.8	143.1	163.7
Charter Bus	12.2	24.6	33.2	32.0	25.0	29.0
Other Bus	1.1	.3	1.2	1.9	1.8	5.0
<b>Total</b>	<b>245.8</b>	<b>247.9</b>	<b>241.3</b>	<b>240.1</b>	<b>235.8</b>	<b>270.5</b>

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215

**FIGURE 12-1: INTERCITY SCHEDULED BUS PASSENGERS, 1980 – 2000**



Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215

of almost one million passengers in 1999, there was a moderate increase of 568 thousand passengers in 2000.

## CHARTER OPERATORS

Charter bus companies earned two thirds of their revenues by providing charter, sightseeing and shuttle services. Charter bus operators generated a significant portion of their revenues from other services, including nine per cent from intercity services and ten per cent from other passenger bus services.

Revenues for the charter, sightseeing and shuttle bus service lines rose to \$449 million in 2000, up 27 per cent from 1999. Table 12-12 shows revenues of the charter bus industry by service line from 1995 to 2000.

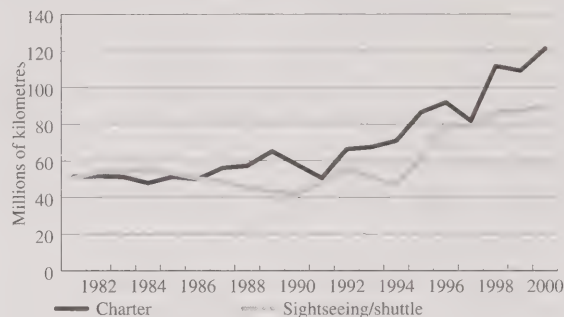
**TABLE 12-12: CHARTER BUS INDUSTRY REVENUES, BY SERVICE LINE, 1995 – 2000**

	(Millions of dollars)					
	1995	1996	1997	1998	1999	2000
Scheduled Intercity	24.9	25.8	21.0	14.6	9.7	14.8
Charter	185.7	185.0	163.7	202.2	184.0	223.3
Shuttle and Sightseeing	11.9	18.3	17.0	20.6	21.8	28.1
School Bus	91.8	101.9	110.9	126.0	132.7	178.0
Urban Transit	3.6	3.2	3.7	5.3	4.2	4.8
<b>Total</b>	<b>317.9</b>	<b>334.2</b>	<b>316.4</b>	<b>368.7</b>	<b>352.4</b>	<b>449.0</b>

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215

As Figure 12-2 shows, bus-kilometres have more than doubled since 1991. In 2000, total bus-kilometres, sightseeing/shuttle and charter combined, stood at 210.8 million kilometres. An increase in annual bus-kilometres is an indication of the expansion in charter service.

**FIGURE 12-2: CHARTER CARRIER BUS-KILOMETRES, 1981 – 2000**



Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215

## URBAN TRANSIT

The service line revenues for urban transit were almost \$2 billion in 2000, up 7.7 per cent from 1999. Urban transit operators provide the majority of urban transit service, accounting for 97 per cent of total service line revenues in 2000. School bus operators are the next largest provider of transit services, accounting for 2.4 per cent of urban transit service revenues.

Table 12-13 shows revenues of the urban transit sector by type of service from 1995 to 2000.

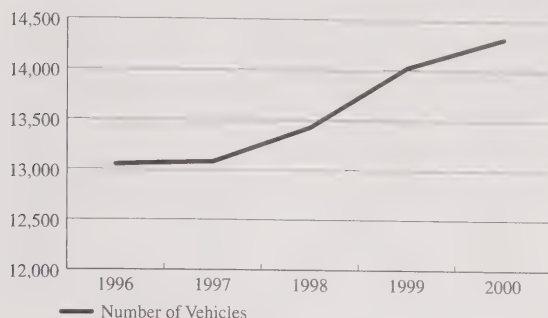
**TABLE 12-13: URBAN TRANSIT REVENUES, BY SERVICE LINE, 1995 – 2000**

	(Millions of dollars)					
	1995	1996	1997	1998	1999	2000
Scheduled Intercity	6.6	3.8	3.6	2.5	2.2	5.4
School Bus	16.8	26.3	41.5	35.3	36.8	46.9
Charter Bus	6.0	7.4	6.4	7.9	16.8	15.4
Urban Bus	1,454.4	1,531.5	1,620.8	1,648.3	1,761.3	1,888.5
<b>Total</b>	<b>1,483.8</b>	<b>1,568.9</b>	<b>1,672.2</b>	<b>1,694.0</b>	<b>1,817.0</b>	<b>1,956.2</b>

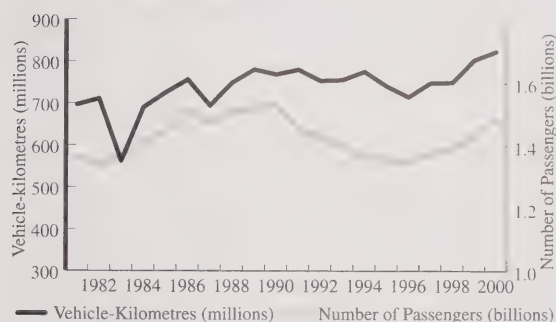
Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215

The number of passengers who use urban transit has increased each year since 1996. In 2000, 1.49 billion passengers used urban transit — the highest ridership level since 1990. Ridership levels in 2000 increased by 10.4 per cent.

As Figure 12-3 shows, there were 14,313 vehicles in the urban transit fleet in 2000, an increase of almost

**FIGURE 12-3: URBAN TRANSIT FLEET SIZE, 1996 – 2000**

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215

**FIGURE 12-4: LONG-TERM TRENDS IN URBAN TRANSIT, 1981 – 2000**

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215

ten per cent since 1996. With this increase in fleet size, the total distance travelled has also increased, from 716 million vehicle-kilometres in 1996 to 826 million vehicle-kilometres in 2000, an improvement of 15 per cent. Figure 12-4 shows the trends in urban transit by number of passengers and vehicle-kilometres from 1981 to 2000.

**TABLE 12-14: URBAN TRANSIT FLEET COMPOSITION, 1996 – 2000**

	1996	1997	1998	1999	2000
Number of carriers reporting	77	65	62	66	67
Standard motor bus	9,622	9,030	8,554	8,234	8,172
Low floor bus	499	1,019	1,827	2,453	2,724
Trolley coach	319	322	315	304	303
Articulated bus	287	287	297	325	347
Light rail vehicle	520	520	520	520	521
Heavy rail vehicle	1,373	1,381	1,395	1,419	1,431
Commuter rail vehicle	359	336	346	505	531
Other	70	182	169	262	284
<b>Total vehicles</b>	<b>13,049</b>	<b>13,077</b>	<b>13,423</b>	<b>14,022</b>	<b>14,313</b>

Source: Statistics Canada, Cat. 53-215

Table 12-14 shows the changes in the composition of the urban transit fleet from 1996 to 2000. The biggest change in the fleet composition over this period was the replacement of standard buses by more accessible, low-floor buses.

## AUTOMOBILE TRANSPORTATION

### CANADIAN VEHICLE SURVEY

The 2000 Canadian Vehicle Survey (CVS) provides national estimates of the major characteristics and uses of motor vehicles, including type of vehicle, trip and driver.

The Canadian in-scope motor vehicle fleet stood at 17.3 million vehicles in 2000, of which 16.6 million were light vehicles weighing less than 4,500 kilograms. Table 12-15 shows statistics for light vehicles by province in 2000.

**TABLE 12-15: LIGHT VEHICLE STATISTICS BY PROVINCE/ TERRITORY, 2000**

	Light Vehicle Registrations		Vehicle-kilometres		Average Distance Driven	
	Share (thousands)	(per cent)	(billions)	Share (thousands of)	(per cent)	kilometres
Newfoundland	240.5	1.4	4.8	1.7	20.0	
Prince Edward Island	71.7	0.4	1.2	0.4	16.5	
Nova Scotia	501.4	3.0	8.5	3.0	17.0	
New Brunswick	422.9	2.5	8.2	2.9	19.3	
Quebec	3,781.5	22.7	62.9	22.3	16.6	
Ontario	6,268.6	37.7	106.5	37.8	17.0	
Manitoba	581.8	3.5	9.3	3.3	16.0	
Saskatchewan	615.8	3.7	10.5	3.7	17.1	
Alberta	1,909.8	11.5	36.2	12.8	18.9	
British Columbia	2,206.5	13.3	33.3	11.8	15.1	
Yukon	21.3	0.1	0.3	0.1	15.0	
Northwest Territories	17.9	0.1	0.2	0.1	12.5	
Nunavut	2.5	0.0	0.0	0.0	10.1	
<b>Canada</b>	<b>16,642.1</b>	<b>100.0</b>	<b>282.0</b>	<b>100.0</b>	<b>16.9</b>	

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

Vehicle owners in Ontario and Quebec accounted for about 60 per cent of all on-road light vehicles. The Atlantic Provinces accounted for six per cent of the total fleet, while the Prairie Provinces accounted for less than 20 per cent. British Columbia represented 13 per cent of the total fleet, while the territories accounted for about 0.3 per cent.

Annual vehicle-kilometres for light vehicles totalled 282 billion in 2000. The distribution by province and territory was largely proportional to the population of the jurisdiction. Ontario had the most vehicle-kilometres, with 106.5 billion, or 38 per cent of the total. Quebec was second with 62.9 billion, or 22 per cent, followed by



Alberta with 36.2 billion, or 13 per cent and British Columbia with 33.3 billion, or 12 per cent. The rest of the provinces' share totalled just over 15 per cent.

In 2000, the provincial average distance driven by light vehicles was nearly 17,000 kilometres. Newfoundland used its light vehicles the most, with 20,000 kilometres driven, while British Columbia used its light vehicles the least, with a little over 15,000 kilometres.

Table 12-16 provides a breakdown of vehicle activity by vehicle body type for all jurisdictions. In 2000, Canada's total vehicle fleet was made up of ten million automobiles, 400,000 station wagons, 2.75 million light pickup trucks, 2.2 million vans, and 1.14 million sport-utility vehicles.

**TABLE 12-16: DISTRIBUTION OF VEHICLE ACTIVITY BY VEHICLE BODY, 2000**

	Car	Station wagon	Van	Sport-utility	Pickup truck	Total
Vehicles (millions)	10.05	0.41	2.20	1.14	2.75	16.55
Per cent share	60.73	2.48	13.29	6.89	16.62	100.00
Vehicle-kilometres (billions)	161.00	7.80	42.70	22.10	47.00	280.60
Per cent share	57.38	2.78	15.22	7.88	16.75	100.00
Passenger-kilometres (billions)	268.80	13.80	85.50	36.70	67.00	471.80
Per cent share	56.97	2.92	18.12	7.78	14.20	100.00
Litres of fuel (billions)	16.30	0.90	5.00	3.10	6.30	31.60
Per cent share	51.58	2.85	15.82	9.81	19.94	100.00
Distance driven (thousands of kilometres)	16.00	18.90	19.40	19.40	17.10	18.16
Persons per vehicle	1.67	1.78	2.00	1.65	1.43	1.71
Fuel efficiency (L/100km)	10.14	11.49	11.81	14.20	13.36	12.20

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

Cars and station wagons accounted for nearly 170 billion vehicle-kilometres, followed by pickup trucks with 47 billion, vans with 43 billion and sport utility vehicles with 22 billion. Together, vans and light trucks accounted for nearly 112 billion vehicle-kilometres.

Over 283 billion passenger-kilometres for cars and station wagons were estimated for 2000. Vans and light trucks accounted for nearly 190 billion passenger-kilometres.

In terms of average use, cars were the least used of all body types, with 16,000 kilometres per year. All other light vehicles were used more heavily, averaging nearly 20,000 kilometres per year.

Occupancy per light vehicle averaged approximately 1.68 persons per vehicle. Not surprisingly, the multi-seat van had the highest occupancy; however, it still managed an average occupancy of only two persons per vehicle.

Pickup trucks had the lowest average occupancy, at 1.43 persons per vehicle.

The fuel consumption rate for cars and station wagons was estimated at 10.2 litres per 100 kilometres. Light trucks and vans accounted for 14.5 billion litres of fuel purchased. The fuel efficiency of light trucks averaged about 13 litres per 100 kilometres; vans were more fuel efficient, at 11.8 litres per 100 kilometres. Sport-utilities were the least fuel-efficient vehicle, at 14.2 litres per 100 kilometres.

Table 12-17 compares characteristics of the light vehicle fleet by age of the vehicle. Almost 40 per cent of the light vehicle fleet was under six years old, and 20 per cent was under three years old. On average, these vehicles had the best fuel efficiency and were used the most. Light vehicles six years old or less were driven an average of 20,000 kilometres annually, while light vehicles seven years or older were driven about 14,000 kilometres annually. Fuel efficiency for vehicles under six years old was nearly nine per cent better than for vehicles over six years.

**TABLE 12-17: VEHICLE CHARACTERISTICS BY AGE OF VEHICLE, 2000**

Age of vehicle	-- Vehicle Count -- Share (thousands) (per cent)	Vehicle-kilometres (billions)	Distance Driven (thousands of kilometres)	Fuel Efficiency (L/100Km)
Two years or less	3,514 20.9	69.71	19.8	10.7
Three to five	3,018 18.0	64.43	21.3	10.8
Six to nine	4,172 24.9	72.01	17.3	11.3
Ten to thirteen	3,735 22.3	51.26	13.7	12.3
Fourteen or more	2,346 14.0	24.01	10.2	12.0
<b>Total</b>	<b>16,784 100.0</b>	<b>281.42</b>	<b>16.8</b>	<b>11.3</b>

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

## DRIVER AND TRIP CHARACTERISTICS

Table 12-18 provides estimates of vehicle-kilometres and passenger-kilometres by driver age in 2000. Drivers between the ages of 35 and 54 carried out the majority of vehicle-kilometres and passenger-kilometres. Drivers aged 35 to 44 accounted for the single largest share (30 per cent of vehicle-kilometres and 32 per cent of passenger-kilometres). Drivers younger than 25 accounted for about seven per cent, while drivers 65 and older were responsible for nearly ten per cent of the activity in 2000. Per capita travel, however, was highest among groups between the ages of 35 and 54. Drivers aged 35 to 44 accounted for almost 16,000 vehicle-kilometres and over 30,000 passenger-kilometres per year, while drivers aged 45 to 54 did 16,000 vehicle-kilometres and 28,000 passenger-kilometres in 2000. Per capita travel was lowest in the under-20 age group

**TABLE 12-18: VEHICLE USE BY DRIVER AGE, 2000**

Age Group	----- Population -----		----- Vehicle-kilometres -----			----- Passenger-kilometres -----		
	(thousands)	Share (per cent)	(billions)	Share (per cent)	Per capita	(billions)	Share (per cent)	Per capita
16 - 19	7,943	25.8	6.4	2.1	800	11.0	2.2	1,390
20 - 24	2,081	6.8	14.5	4.7	6,549	20.7	4.1	9,923
25 - 34	4,393	14.3	50.5	16.3	9,681	71.1	14.1	16,196
35 - 44	5,307	17.3	92.4	29.8	15,748	163.0	32.3	30,708
45 - 54	4,365	14.2	77.5	25.0	16,215	123.1	24.4	28,210
55 - 64	2,812	9.1	39.3	12.7	12,772	66.9	13.3	23,800
65 - 74	2,135	6.9	22.8	7.4	10,490	39.0	7.7	18,264
75 - 84	1,299	4.2	5.7	1.9	4,405	9.0	1.8	6,921
85 +	416	1.4	0.5	0.2	1,248	1.0	0.2	2,479
<b>Total</b>	<b>30,750</b>	<b>100.0</b>	<b>309.8</b>	<b>100.0</b>	<b>9,152</b>	<b>504.9</b>	<b>100.0</b>	<b>16,419</b>

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations. Population data: Statistics Canada, Annual Demographic Statistics

**TABLE 12-19: VEHICLE USE BY DRIVER AGE GROUP AND SEX, 2000**

Sex and Age Group	----- Population -----		----- Vehicle-kilometres -----			----- Passenger-kilometres -----		
	(thousands)	Share (per cent)	(billions)	Share (per cent)	Per capita	(billions)	Share (per cent)	Per capita
Male, 16 - 24	5,138	16.7	11.1	3.6	2,155	17.3	3.4	3,368
Male, 25 - 54	7,065	22.9	155.2	50.1	21,972	243.8	48.3	34,507
Male, 55 +	3,030	9.9	52.7	17.0	17,405	91.0	18.0	30,020
Male - total	15,233	49.5	219.0	70.7	14,379	352.0	69.7	23,111
Female, 16 - 24	4,885	15.9	9.8	3.2	2,001	14.4	2.8	2,945
Female, 25 - 54	7,000	22.8	65.3	21.1	9,327	113.5	22.5	16,208
Female, 55 +	3,632	11.8	15.7	5.1	4,318	25.0	4.9	6,880
Female - total	15,517	50.5	90.7	29.3	5,848	152.8	30.3	9,849
<b>Total</b>	<b>30,750</b>	<b>100.0</b>	<b>309.8</b>	<b>100.0</b>	<b>20,227</b>	<b>504.9</b>	<b>100.0</b>	<b>16,419</b>

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

(800 vehicle-kilometres and 1,400 passenger-kilometres) and the two groups over 75, who did 4,400 and 1,250 vehicle-kilometres, respectively, and 7,000 and 2,500 passenger-kilometres, respectively.

Table 12-19 provides a separate breakdown of vehicle use in 2000 by sex and age group. Most striking was the dramatic difference in both absolute and per capita vehicle use between males and females. As a whole, males accounted for nearly 70 per cent of vehicle use, and in per capita terms drove nearly two and a half times more than females (14,400 vehicle-kilometres versus 5,800 vehicle-kilometres). The discrepancy was especially large in the 55+ age group, where males drove 17,000 vehicle-kilometres on average while females drove only 4,300. Among the 25 to 54 age group, males drove 22,000 vehicle-kilometres on average, while females drove 9,300. There was no appreciable difference in vehicle use between males and females younger than 25.

Table 12-20 shows estimated vehicle-kilometres by day of the week for light vehicles in 2000. Light vehicle use was distributed very evenly over the days of the week but did exhibit some peaking on Thursdays and Fridays, with each day responsible for over 15 per cent of total vehicle-kilometres. Light vehicles were used the least on Sunday, with only 12.5 per cent of total vehicle-kilometres.

**TABLE 12-20: VEHICLE USE BY DAY OF THE WEEK, 2000**

	----- Vehicle-kilometres -----	
	(billions)	Share (per cent)
Sunday	35.3	12.5
Monday	39.3	13.9
Tuesday	40.1	14.3
Wednesday	39.6	14.1
Thursday	43.3	15.4
Friday	45.3	16.1
Saturday	38.7	13.7
<b>Total</b>	<b>281.4</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada

Table 12-21 shows vehicle-kilometres by time of day in 2000. Overall, about 75 per cent of all travel took place during daylight hours, with the afternoon period from noon until 17:59 accounting for roughly 45 per cent of total activity. The early morning period from midnight to 6:00 a.m., not surprisingly, had the lowest level of activity, with only four per cent of total vehicle-kilometres.

**TABLE 12-21: VEHICLE USE BY TIME OF DAY, 2000**

Time of day	----- Vehicle-kilometres -----	
	(billions)	Share (per cent)
0:00-5:59	9.2	3.3
6:00-11:59	87.4	31.0
12:00-17:59	127.7	45.4
18:00-23:59	57.2	20.3
<b>Total</b>	<b>281.4</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada

Table 12-22 shows the distribution of vehicle-kilometres by trip length in 2000. Over 70 per cent of total vehicle use in 2000 had a trip length of at least 25 kilometres. Trips of 80 kilometres or more accounted 38 per cent, the highest share of the estimated total light vehicle-kilometres travelled.

**TABLE 12-22: VEHICLE USE BY TRIP LENGTH, 2000**

Trip length	----- Vehicle-kilometres -----	
	(billions)	Share (per cent)
0 – 4 kilometres	7.2	2.6
5 – 24 kilometres	73.4	26.1
25 – 79 kilometres	94.5	33.6
80 + kilometres	106.4	37.8
<b>Total</b>	<b>281.4</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada

Table 12-23 analyses light vehicle activity by trip purpose. Trips to or from work or school accounted for 22 per cent of vehicle-km but only 16 per cent of passenger-km. Shopping trips represented over one-quarter of the activity while recreational or social purposes made up about 20 per cent of vehicle-km and 23 per cent of passenger-km. Other, non-specified, purposes made up another fifth of vehicle-km and one-quarter of the passenger-km. Use of light vehicles for work purposes accounted for 11.5 per cent of vehicle-km and eight per cent of passenger-km. On balance, recreational/social trips, which have a large intercity travel component, had the highest vehicle occupancies at about two persons per vehicle, while the lowest occupancies were for work/school trips at only 1.3 persons per vehicle.

**TABLE 12-23: LIGHT VEHICLE ACTIVITY BY TRIP PURPOSE, 2000**

	Vehicle-kilometres		Passenger-kilometres		Persons per vehicle
	(billions)	Share (per cent)	(billions)	Share (per cent)	
Work/school	61.0	21.7	76.9	16.2	1.26
Shopping/errands	73.1	26.0	126.8	26.7	1.73
Recreational/social	54.9	19.5	111.0	23.4	2.02
Other destination	59.8	21.3	120.6	25.4	2.02
Pick-up/deliver goods	11.3	4.0	13.0	2.7	1.15
Service call	9.1	3.2	10.9	2.3	1.19
Other work purpose	12.1	4.3	15.8	3.3	1.30
<b>Total</b>	<b>281.4</b>	<b>100.0</b>	<b>475.1</b>	<b>100.0</b>	<b>1.69</b>

Note: The category "To go home" has been allocated to the other destinations in proportion to the other destinations' shares of vehicle and passenger-kilometres to better represent trip purpose.

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

## MARINE TRANSPORTATION

### CRUISE SHIP TRAFFIC

Within the shipping sector, the cruise ship industry had the potential to be the most immediately and severely affected by the events of September 11, 2001. Initially, certain cruises were cancelled, as passengers were unable to reach the vessels due to flight cancellations. Subsequently, however, occupancy levels recovered with the help of discounting by the industry. The US economic downturn also had an impact on the cruise business, as the great majority of cruise passengers visiting Canadian ports on the east and west coasts are US residents.

Despite several missed sailings after September 11, the Port of Vancouver registered its 19th consecutive year of growth in 2001, with over 1,060,000 passengers, up one per cent from 2000 which was Vancouver's first million-plus passenger year. Technical problems with the new Celebrity Cruises vessel *Infinity* also resulted in two missed sailings earlier in the season. Twenty-six vessels from 13 cruise lines made calls to the Port of Vancouver in 2001. The number of sailings was down slightly from previous years, but newer, larger vessels are in service. The number of cruises to Alaska was supplemented by increasingly popular off-peak mini-cruises of three to four days between Vancouver, Victoria and Seattle.

The cruise ship business in Halifax was not hurt by September 11; it ended the season with record numbers for the fifth consecutive year. Ninety-six cruise vessels brought more than 160,000 passengers to the port, an increase of 16 per cent over 2000. The cruise season was also the longest to date — 200 days of visits from April 16 to November 1.

Many smaller ports in the Atlantic Provinces are also seeing increased visits from cruise vessels. Cornerbrook, Newfoundland, for example, received 11 visits from cruise vessels, bringing over 13,000 passengers and crew to the city. The visits were primarily during the fall colour season.

Quebec City also saw an increase in cruise traffic in 2001, with nearly 49,000 passengers visiting the city. Montreal and Saint John, however, received fewer passengers than in 2000.

The Great Lakes cruise industry had hoped to see close to 10,000 passengers in 2001, but the final figure may be closer to 5,000. Early in the season, the Greek cruise ship *Arcadia*, chartered by Great Lakes Cruises Inc., had its season of cruising the Great Lakes cancelled after it ran



afoul of US health officials. The parent company of Delta Queen Coastal Voyages, operator of the *Cape May Light*, was declared bankrupt in the aftermath of September 11, putting in question its future on the Great Lakes. Hapag Lloyd's vessel *Columbus* was forced to cancel a voyage immediately following September 11 because the cancellation of international flights prevented a shipload of German tourists from reaching it.

Table 12-24 shows the international cruise ship traffic at major Canadian ports from 1990 to 2001.

**TABLE 12-24: INTERNATIONAL CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990 – 2001**

(Passengers)					
Year	Vancouver	Montreal	Quebec City	Halifax	Saint John
1990	388,323	30,869	34,783	24,423	1,748
1991	423,928	47,047	51,363	43,512	3,402
1992	449,239	34,872	41,141	30,112	5,500
1993	519,942	30,626	38,642	30,917	12,379
1994	591,409	33,920	36,401	37,717	23,629
1995	596,744	27,384	38,981	30,257	12,226
1996	701,547	19,078	21,464	36,584	8,543
1997	816,537	29,324	36,569	44,328	19,813
1998	873,102	32,583	43,838	47,987	28,418
1999	947,659	18,306	34,628	107,837	40,000
2000	1,053,989	25,200	35,855	138,313	101,410
2001 <sup>1</sup>	1,060,383	23,900	48,776	160,241	88,190

<sup>1</sup> Preliminary.

Source: Canada Port Authorities

## FERRY TRAFFIC

Traffic figures for 2001 for all members of the Canadian Ferry Operators Association (CFOA) are not yet available. The relative size of their operations is, however, evident in the traffic figures for 2000. Total passenger traffic is estimated at over 40 million passengers and 17 million vehicles. This represents approximately 15 per cent of total worldwide ferry traffic.

The British Columbia Ferry Corporation, by far the largest operator in Canada, carried approximately 21.5 million passengers and 7.8 million vehicles in 2000. Inland ferry services operated by British Columbia's Ministry of Transportation and Highways and Fraser River Marine Transportation carried another 6.6 million passengers and three million vehicles. In Quebec, La Société des traversiers du Québec carried 5.5 million passengers and 1.9 million vehicles.

In 2001, the federal Crown corporation Marine Atlantic Inc. increased its capacity with the addition of the *MV Leif Ericson*. However, traffic decreased to 481,600 passengers and 232,800 vehicles in service between Newfoundland and Nova Scotia. Private ferry operators subsidized by the federal government increased their

overall traffic, carrying approximately 910,000 passengers and 335,000 vehicles in 2001. The remaining CFOA members, including provincial operations in Newfoundland, Manitoba, Ontario and New Brunswick, accounted for approximately four million passengers and 1.8 million vehicle crossings.

## AIR TRANSPORTATION

### FEDERAL GOVERNMENT POLICY INITIATIVES

Following the events of September 11, 2001, the federal government took action to secure public safety and stabilize the air transportation industry. These initiatives are discussed in detail in Chapter 4.

### MONITORING

After Air Canada acquired Canadian Airlines, the federal government continued to monitor the domestic air market very closely. In addition to Transport Canada's own monitoring efforts, the Minister appointed Ms. Debra Ward as the Independent Transition Observer on Airline Restructuring and Mr. Bruce Hood as the Air Travel Complaints Commissioner. The activities of both observers are covered in more detail in Chapter 10.

### INTERNATIONAL AIR POLICY

#### Scheduled Air Services

Following the Minister's commitment to review Canada's international air policy, Transport Canada released a consultation document in February 2001 for stakeholder review and comment. The review's objective was to liberalize Canada's policy for scheduled international air services, including how Canada approaches the negotiation and management of air traffic rights with other countries. A new policy would guide the government's strategy for negotiating bilateral air agreements, and potentially lead to a broader exchange of rights and less regulation.

The events of September 11 had a significant impact on airline operations and Canadian air carriers were no exception. The commercial and security environment since September 11 has also disrupted the original timetable for addressing the international air policy issues. Transport Canada is addressing the current situation before making a decision on the status of Canada's international policy review.

## International (Bilateral) Initiatives

For the most part, Canada's bilateral air transport negotiations in 2001 responded to the Canadian air industry's priorities, as well as to requests from foreign governments. Several agreements had to be revised as a result of Air Canada's acquisition of Canadian Airlines. In addition, 2001 was marked by a growing interest from some Canadian charter airlines in operating additional scheduled international air services.

In January 2001, Canada concluded an agreement with Aruba, allowing service for the first time from Aruba to any point in Canada, including a liberal pricing regime. In February 2001, Canada amended a memorandum of understanding with Iceland, permitting Icelandair to increase service to Halifax and possibly add other destinations in Canada. In April 2001, Canada concluded a new agreement with Poland that provides significantly expanded opportunities, strong safety and security provisions, and modernized doing-business articles. Similarly, new agreements were concluded with Spain in May and Chile in August. In addition, Canada held discussions with France, Japan, Hong Kong, Portugal and the United Kingdom with a view to expanding opportunities for air service. Table 12-25 lists the bilateral agreements currently in force.

**TABLE 12-25: COUNTRIES/TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 2001**

Antigua	Egypt	Jamaica	Romania
Argentina	El Salvador	Japan	Russia
Aruba	Fiji	Jordan	St. Kitts and Nevis
Australia	Finland	Lebanon	St. Lucia
Austria	France	Malaysia	Saudi Arabia
Bahamas	Germany	Mexico	Singapore
Barbados	Greece	Morocco	South Korea
Belgium	Guatemala	Netherlands	Spain
Brazil	Haiti	Netherlands Antilles	Sweden
Bulgaria	Hong Kong	New Zealand	Switzerland
Cayman Islands	Hungary	Nicaragua	Thailand
Chile	Iceland <sup>1</sup>	Norway	Trinidad and Tobago
China	India	Pakistan	Turkey
Costa Rica	Indonesia	Panama	Ukraine
Cuba	Ireland	Peru	United Arab Emirates
Czech Republic	Israel <sup>2</sup>	Philippines	United Kingdom
Denmark	Italy	Poland	Venezuela
Dominican Republic	Ivory Coast	Portugal	

1 Services to Iceland and Singapore are being operated under memoranda of understanding that are in force.

2 Services to Israel are being operated under temporary arrangements.

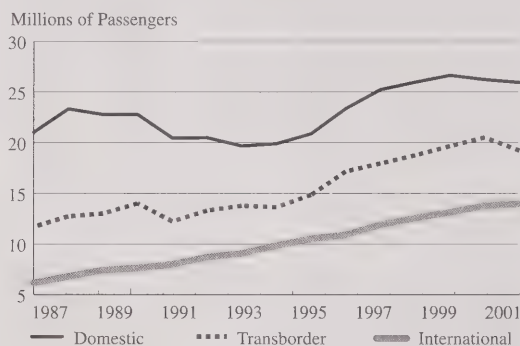
Source: Transport Canada, Air Policy

## SERVICES AND TRAFFIC

The year 2001 was an eventful one for the Canadian air industry. The first eight months of the year began with passenger traffic showing moderate growth, much as it has done so over the past decade. Up until August, air passenger traffic had increased by four per cent in 2001 as compared to 2000. This trend was reversed after September 11 with traffic decreasing by 16 per cent over the last four months of the year. This decrease contributed to the two per cent decrease in traffic experienced over the whole of 2001.

The long-term growth trends of air passenger traffic are compared for each of the sectors in Figure 12-5. The figure also shows that the Canadian air market had experienced uninterrupted growth between 1994 and 2000 and the growing importance of transborder and international air travel.

**FIGURE 12-5: AIR PASSENGERS BY SECTOR, 1987 – 2001**



Note: Data estimated for 2001.

Source: Aviation Statistics Centre, Statistics Canada, Statements 2.4 and 6

Figure 12-6 shows the distribution of air passengers for each of the airports in the National Airports System (NAS). The figure also shows the distribution of passengers by sector for each of the 26 NAS airports.

## DOMESTIC SERVICES AND TRAFFIC

At the beginning of the year, Air Canada continued the restructuring of its domestic network necessitated by its acquisition of Canadian Airlines in 2000. The government anticipated that the transition period resulting from the restructuring of Canada's airline industry would take time — not only for Air Canada to restructure its operations, but also for new and incumbent Canadian carriers to

FIGURE 12-6: ENPLANED/DEPLANED PASSENGERS AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS BY SECTOR



Source: Transport Canada, Air Policy

acquire aircraft and enter the market successfully. Early in the year, domestic competition among airlines began to increase, particularly with the growth of Canada 3000's services and WestJet's expansion. Smaller carriers, such as Provincial Airlines, Peace Air and Hawkair, added services. As a result of these developments, some airport operators made plans to expand their facilities to handle the number of growing air services across Canada.

A new player, Roots Air, entered the market on March 26, 2001. The carrier was a joint venture of SkyService, a charter air services operator, and Roots Inc., a Canadian clothing company. Its marketing objective was to provide affordable full-service air travel in the transnational market. On May 4, however, SkyService and Roots Inc. terminated the operation of Roots Air, citing several reasons: the economic downturn; the demand shift to low-fare, no-frills air travel; and, in particular, the launch of a competitive business-class service by Canada 3000 Airlines. These same factors led SkyService to announce shortly after that the assets of Roots Air would be

re-branded and re-launched as a low-fare carrier for Air Canada. This venture was not concluded due to labour developments at Air Canada. Instead, Air Canada chose to concentrate its efforts on establishing a low-fare division with a fleet of up to 20 aircraft.

Like most other major North American airlines, Air Canada faced economic pressures at the beginning of the year, with declining demand for business travel, increasing competition from low-cost airlines, and rising fuel prices. As a result, Air Canada established several initiatives to reduce costs and enhance revenues. These included a reduced workforce, a reduced schedule, fleet re-alignment, and the launch of a low-fare, pay-for-extras air service under the Tango brand in November 2001. For this new service, Air Canada converted existing fleet assets to all-economy seating, no-frills service and direct reservations by the consumer. The launch of Air Canada's Tango brand is seen as tacit acknowledgement that demand in air transportation has shifted, as both consumers and businesses seek affordable, low-fare air travel alternatives.



In 2001, Air Canada was obligated to serve all communities that were being served in December 1999 by Air Canada, Canadian Airlines or any of their wholly owned subsidiaries, pursuant to the commitment made to the Minister of Transport. In total, 65 communities, listed in Table 12-26, were affected.

**TABLE 12-26: AIR CANADA DOMESTIC AIR SERVICE COMMITMENTS**

<b>Yukon</b> (1 point)	Whitehorse	<b>Ontario</b> (cont'd)	Sarnia
<b>British Columbia</b> (16 points)	Castlegar		Sault Ste. Marie
	Cranbrook		Sudbury
	Fort Nelson		Thunder Bay
	Fort St. John		Timmins
	Kamloops		Toronto/City Centre
	Kelowna		Toronto/Pearson
	Penticton	<b>Quebec</b> (10 points)	Windsor
	Prince George		Bagotville
	Prince Rupert		Baie Comeau
	Quesnel		Gaspe
	Sandspit		Îles-De-La-
	Smithers		Madeleine
	Terrace		Mont Joli
	Vancouver		Montreal
	Victoria		Quebec City
	Williams Lake		Rouyn-Noranda
<b>Alberta</b> (8 points)	Calgary		Sept-Îles
	Edmonton	<b>New Brunswick</b> (5 points)	Val D'Or
	Fort McMurray		Bathurst
	Grande Prairie		Fredericton
	High Level		Moncton
	Lethbridge		Saint John
	Peace River		St. Leonard
	Rainbow Lake	<b>Prince Edward Island</b> (1 point)	Charlottetown
<b>Saskatchewan</b> (2 points)	Regina	<b>Nova Scotia</b> (3 points)	Halifax
	Saskatoon		Yarmouth
<b>Manitoba</b> (2 points)	Thompson		Sydney
	Winnipeg	<b>Newfoundland</b> (6 points)	Deer Lake
<b>Ontario</b> (12 points)			Gander
	Kingston		Goose Bay
	London		St. John's
	North Bay		Stephenville
	Ottawa		Wabush

Source: Transport Canada, Air Policy

The events of September 11 compounded the effects of the economic downturn, causing a 15 to 20 per cent decrease in domestic demand in September 2001 compared with 2000. (See also Chapter 10).

WestJet continued to grow, adding Comox, Fort McMurray, Sault Ste. Marie, Sudbury and Thompson to its network during 2001. In addition, WestJet began to take advantage of the long-range capabilities of its new 140-seat B737-700 aircraft by introducing several new routes from western Canada to Hamilton and Ottawa.

Regional carriers also entered and left markets. Bearskin Airlines began a seven-times daily scheduled air

service between Toronto's Buttonville Airport and Ottawa using 9-seat Pilatus PC-12 turboprop aircraft. It also introduced scheduled air service between Winnipeg and Dryden, Ontario, in October 2001, immediately following Calm Air's termination of service in that market. In western Canada, Hawkair expanded its service to Prince Rupert and Smithers. Table 12-27 summarizes these changes to domestic service.

**TABLE 12-27: CHANGES TO DOMESTIC SCHEDULED AIR SERVICES IN 2001**

(Minimum daily flight in both directions, 25 daily seats)

<i>City Pair</i>	<i>Frequency</i>	<i>Airline</i>
<b>New Services</b>		
Calgary Abbotsford	3	Air Canada Regional
Calgary Comox	1	WestJet
Calgary Hamilton	1	WestJet
Calgary Victoria	2	Air Canada Regional
Calgary Yellowknife	1	Air NorTerra
Deer Lake Goose Bay/Wabush	1	Provincial Airlines
Edmonton Fort McMurray	3	WestJet
Edmonton Hamilton	1	WestJet
Hamilton Sudbury	2	WestJet
Ottawa Toronto (Buttonville)	7	Bearskin Airlines
Timmins Kapuskasing	3	Bearskin Airlines
Vancouver Dawson Creek	2	Air Canada/Central Mountain Air
Vancouver Prince Rupert	1	Hawkair
Vancouver Smithers	1	Hawkair
<b>Discontinued Services</b>		
Calgary Halifax	1	Air Canada
Halifax St. John's	3	Canada 3000
Montreal Edmonton	1	Air Canada
Montreal Halifax	4	Canada 3000
Montreal Quebec City	4	Regionair
Montreal St. John's	1	Air Canada
Montreal Winnipeg	2	Air Canada
Ottawa Halifax	4	Canada 3000
Ottawa Windsor	1	Air Canada Regional
Quebec City Baie Comeau/Sept-Îles	2	Regionair
Quebec City Charlo/Miramichi	2	Air Canada/Air Labrador
St. John's Gander	2	Provincial Airlines
Thunder Bay Dryden	2	Air Canada/Calm Air
Timmins Kapuskasing/Hearst	1	Air Creebec
Toronto Halifax	4	Canada 3000
Toronto Montreal	13	Canada 3000
Toronto Ottawa	8	Canada 3000
Toronto Vancouver	2	Canada 3000
Toronto Winnipeg	7	Canada 3000
Vancouver Halifax	1	Air Canada
Vancouver Regina	2	Air Canada Regional
Vancouver Saskatoon	2	Air Canada Regional
Vancouver Winnipeg	1	Canada 3000
Winnipeg Dryden	2	Air Canada/Calm Air

Source: Official Airline Guide and airline timetables

Table 12-28 summarizes the level of competition in terms of seats offered. It confirms the domestic market dominance of Air Canada, which operated 76 per cent of the available domestic seating capacity in the top 25 domestic markets at year-end. This was down slightly from the 77 per cent share reported at the end of 2000

**TABLE 12-28: COMPETITION IN DOMESTIC AIR MARKETS AS OF DECEMBER 31, 2001**

Rank	Market <sup>1</sup>	Daily Seats 2001 <sup>2</sup>	Per cent change over 2000	----- Capacity Market Shares (per cent) -----			Daily Seats in 2000
				Air Canada <sup>3</sup>	WestJet	Air Transat	Others
1	Montreal – Toronto	3,956	(37)	100	0	0	6,255
2	Toronto – Vancouver	3,053	(5)	94	0	6	3,203
3	Calgary – Vancouver	2,716	(11)	59	41	0	3,042
4	Ottawa – Toronto	2,595	(30)	100	0	0	3,696
5	Calgary – Edmonton	1,957	(8)	52	48	0	2,119
6	Calgary – Toronto	1,656	(25)	100	0	0	2,220
7	Edmonton – Vancouver	1,484	(7)	54	46	0	1,595
8	Halifax – Toronto	1,361	(29)	100	0	0	1,929
9	Toronto – Winnipeg	1,228	(37)	100	0	0	1,954
10	Vancouver – Victoria	1,074	(26)	81	0	0	1,445
11	Calgary – Winnipeg	1,033	7	44	56	0	964
12	Edmonton – Toronto	949	(11)	100	0	0	1,060
13	Kelowna – Vancouver	817	(7)	38	62	0	879
14	Abbotsford – Calgary	707	58	24	76	0	446
15	Calgary – Kelowna	617	0	33	67	0	615
16	Calgary – Regina	590	(16)	44	56	0	700
17	Halifax – St. John's	583	(45)	100	0	0	1,056
18	Calgary – Saskatoon	565	(10)	47	53	0	628
19	Prince George – Vancouver	531	(25)	56	44	0	709
20	Edmonton – Fort McMurray	506	143	36	64	0	208
21	Hamilton – Ottawa	505	82	0	100	0	277
22	Halifax – Montreal	500	(53)	100	0	0	1,072
23	Montreal – Quebec City	499	(22)	100	0	0	636
24	Hamilton – Winnipeg	464	13	0	100	0	411
25	Thunder Bay – Toronto	452	(23)	100	0	0	591

1 The top 25 markets are ranked on the number of daily seats.

2 The number of daily seats is defined as the average number of seats offered on non-stop flights in each direction.

3 Data for Air Canada includes the number of seats operated by Canadian Airlines and regional code-share partners.

Source: Official Airline Guide and airline timetables

when Canada 3000 was operating. Figure 12-7 presents domestic market shares at the 26 National Airports System (NAS) airports.

Table 12-29 shows the number of non-stop links to the airports in the National Airports System. The number of links depends on the amount of traffic generated and the airport's role as a gateway to remote communities (i.e. Winnipeg, Yellowknife). In general, the table shows a decrease in the number of city-pairs served. This reflects Air Canada's reduction in service and the demise of Canada 3000.

Table 12-30 summarizes the growth of domestic air travel over the past ten years. It shows a slight decrease of 1.6 per cent in traffic in 2000, after six consecutive years of growth since 1994. Preliminary airport statistics suggest no change in traffic for 2001. Traffic growth of four per cent during the first eight months of 2001 counterbalanced the estimated 11 per cent decrease in traffic after September. Figure 12-8 summarizes the regional distribution of passenger traffic. In addition, Figure 12-5 compares the growth in the number of air passengers in the domestic sector with those in the transborder and international sectors.

**TABLE 12-29: NATIONAL AIRPORTS SYSTEM (NAS) NUMBER OF DOMESTIC MARKETS SERVED<sup>1</sup> INCLUDING CHARTERS AS OF DECEMBER 2001**

Airport	Number of Markets with Non-stop Flights		Total	Number of Airlines <sup>2</sup>
	NAS Airports	Non-NAS Airports		
Calgary	13	10	23	3
Charlottetown	2	0	2	1
Edmonton	10	7	17	4
Fredericton	6	0	6	1
Gander	1	1	2	1
Halifax	9	5	14	1
Iqaluit	1	19	11	3
Kelowna	4	0	4	2
London	3	1	4	1
Moncton	6	1	7	1
Montreal (Dorval) <sup>3</sup>	15	14	29	4
Ottawa	15	6	21	6
Prince George	3	1	4	2
Quebec City	4	4	8	1
Regina	6	1	7	3
Saint John	5	0	5	1
Saskatoon	6	2	8	3
St. John's	3	4	7	3
Thunder Bay	4	8	12	4
Toronto	18	7	25	2
Vancouver	10	21	31	8
Victoria	6	0	6	3
Whitehorse	1	2	3	3
Winnipeg	8	15	23	7
Yellowknife	2	15	17	6

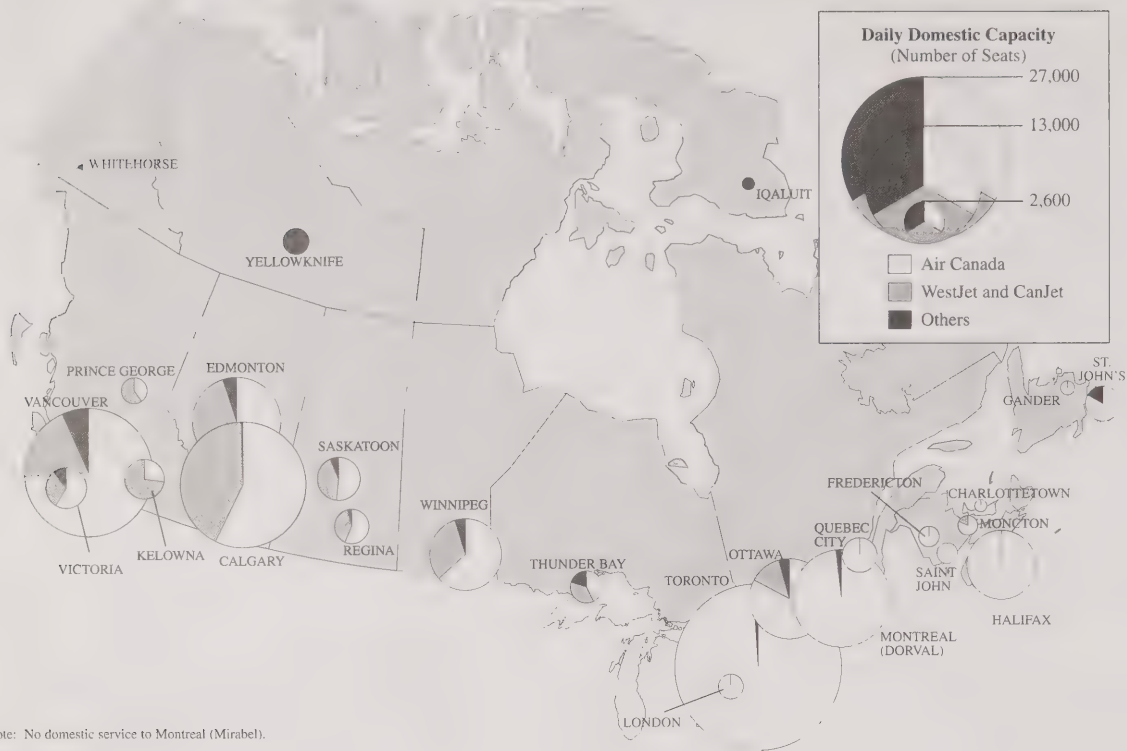
1 Number of airports with non-stop flights only

2 Regional airlines are counted as an airline only if they do not code-share with Air Canada

3 There are no domestic services to Montreal (Mirabel)

Source: Official Airline Guide and airline timetables

FIGURE 12-7: DOMESTIC MARKET SHARE AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS, DECEMBER 2001



Note: No domestic service to Montreal (Mirabel).

Source: Transport Canada, Air Policy

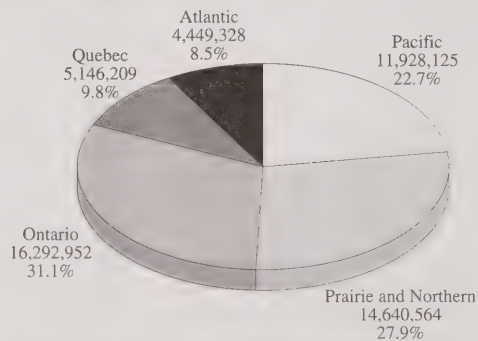
TABLE 12-30: DOMESTIC PASSENGER TRAFFIC, 1988 – 2000

Year	Thousands	Annual per cent change
1988	23,338	
1989	22,784	(2.4)
1990	22,784	0.0
1991	20,463	(10.2)
1992	20,500	0.2
1993	19,676	(4.0)
1994	19,902	1.1
1995	20,889	5.0
1996	23,371	11.9
1997	25,241	8.0
1998	25,972	2.9
1999	26,645	2.6
2000	26,229	(1.6)

Note: Passenger traffic is based on enplaned and deplaned passengers but has been divided by two to avoid the double counting of passengers.

Source: Statistics Canada

FIGURE 12-8: DOMESTIC PASSENGER TRAFFIC BY REGION, 2000



Note: Enplaned and deplaned passengers (passengers double-counted).

Source: Aviation Statistics Centre, Statistics Canada, Statements 2,4 and 6



## CANADA-US TRANSBORDER SERVICES AND TRAFFIC

Traffic continued to grow in the transborder market, reaching a total of 20.5 million passengers in 2000, a 4.4 per cent increase over 1999. The market continued to exhibit moderate growth in the first eight months of 2001, with an estimated 3.3 per cent increase. After September 11, however, transborder traffic decreased by some 27 per cent compared with the same period in 2000.

Table 12-31 summarizes the changes in transborder traffic since the "Open Skies" agreement between Canada and the United States that was signed in February 1995. Canadian operators continue to carry more passengers than US operators. The US industry has, however, carried 28 per cent more traffic since 1994.

**TABLE 12-31: CANADA-US AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 2000**

Year	Canadian Carriers		US Carriers		All Carriers	
	Passengers (thousands)	Market share (per cent)	Passengers (thousands)	Market share (per cent)	Passengers (thousands)	Annual change (per cent)
1991	5,182	42.3	7,057	57.7	12,239	--
1992	5,619	42.2	7,688	57.8	13,307	3.6
1993	5,634	40.9	8,146	59.1	13,780	3.6
1994	5,908	43.3	7,735	56.7	13,643	(1.0)
1995	6,482	43.7	8,367	56.3	14,849	8.8
1996	7,850	45.7	9,317	54.3	17,167	15.6
1997	8,883	49.5	9,069	50.5	17,952	4.6
1998	9,490	50.6	9,266	49.4	18,756	4.5
1999	9,903	50.4	9,759	49.6	19,662	4.8
2000	10,632	51.8	9,891	48.2	20,523	4.4

Note: Excludes passengers carried by non-Canadian and non-US carriers.

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6, and Transport Canada

The events of September 11 and the subsequent downturn in traffic forced the airlines to reduce or eliminate service in many transborder markets. Table 12-32 lists the changes to transborder services, showing that 39 routes were discontinued and nine new routes were added in 2001. The demise of Canada 3000 also contributed to the high number of discontinued routes.

**TABLE 12-32: CHANGES TO TRANSBORDER SCHEDULED AIR SERVICES IN 2001**

(Minimum daily flight in both directions, 25 daily seats)

City Pair	Frequency	Airline
<b>New Services</b>		
Calgary	Phoenix, AZ	1 Air Canada
Ottawa	Atlanta, GA	2 Delta/Atlantic Southeast
Toronto	Charleston, SC	1 Air Canada
Toronto	Columbus, OH	3 America West/Mesa
Toronto	Greensboro, NC	2 Air Canada
Toronto	Norfolk, VA	1 Air Canada
Toronto	White Plains, NY	1 Air Canada
Toronto	White Plains, NY	4 Continental Express
Vancouver	Phoenix, AZ	1 Air Canada
<b>Discontinued Services</b>		
Calgary/Edmonton	Los Angeles, CA	1 Canada 3000
Edmonton	Chicago, IL	1 Air Canada
Edmonton	Denver, CO	2 Air Canada Regional
Halifax	Boston, MA	3 American Eagle
Halifax	New York (Newark), NY	2 Air Canada
Halifax	Washington (Dulles), DC	2 Air Canada
Hamilton	Pittsburgh, PA	4 US Airways/Chautauqua
Montreal (Dorval)	Boston, MA	3 American Eagle
Montreal (Dorval)	Dallas, TX	1 American
Montreal (Dorval)	Denver, CO	1 Air Canada
Montreal (Dorval)	New York (La Guardia), NY	4 Delta/Atlantic Coast Jet
Montreal (Dorval)	Portland, ME	1 Air Canada Regional
Montreal (Dorval)	San Francisco, CA	1 Air Canada
Montreal (Dorval)	Washington (Reagan), DC	3 Air Canada
Montreal (Mirabel)	Fort Lauderdale, FL	X Canada 3000
Ottawa	Boston, MA	3 American Eagle
Ottawa	Raleigh, NC	2 Air Canada
Ottawa	Washington (Reagan), DC	1 Air Canada
Toronto	Akron, OH	3 Air Canada/Air Georgian
Toronto	Denver, CO	2 United
Toronto	Fort Lauderdale, FL	X Canada 3000
Toronto	Fort Myers, FL	X Canada 3000
Toronto	Fort Wayne, IN	2 Air Canada/Air Georgian
Toronto	Los Angeles, CA	1 Canada 3000
Toronto	New York (Newark), NY	1 Canada 3000
Toronto	Orlando, FL	X Canada 3000
Toronto	Phoenix, AZ	1 America West
Toronto	San Francisco, CA	1 United
Toronto	San Jose, CA	1 Air Canada
Toronto	St. Petersburg, FL	X Canada 3000
Toronto	Washington (Reagan), DC	3 US Airways/Mesa
Vancouver	Dallas, TX	1 Air Canada
Vancouver	Denver, CO	1 Air Canada
Vancouver	Los Angeles, CA	1 Canada 3000
Vancouver	Portland, OR	1 Delta/Skywest
Vancouver	Spokane, WA	2 Air Canada/Central Mountain Air
Vancouver	St. Louis, MO	1 Trans World
Vancouver	Washington (Dulles), VA	1 Air Canada
Winnipeg	Denver, CO	1 Air Canada Regional

Note: X = Seasonal

1 Service between Halifax and New York (Newark) to resume April 7, 2002

2 Service between Montreal and Washington (Reagan) to resume January 14, 2002

Source: Official Airline Guide and airline timetables

## INTERNATIONAL SERVICES AND TRAFFIC

Air Canada introduced several new international routes in the fall of 2001:

- Montreal-Cancun
- Toronto-Cancun
- Toronto-Grand Cayman
- Toronto-Honolulu-Melbourne
- Toronto-Puerto Vallarta
- Toronto-San Juan
- Vancouver-Cancun
- Vancouver-Puerto Vallarta

In addition, the carrier restored summer service between Edmonton and London, England.

Among foreign carriers, Philippine Airlines announced the restoration of its Vancouver-Manila service.

Following September 11, a number of services were cancelled. Air Canada cancelled its services from Toronto to Copenhagen, Glasgow, Munich and Manchester. The carrier hopes to resume service to Amsterdam, Glasgow and Manchester some time in 2002. First Air has ceased serving Iqaluit (Nunavut)-Kangerlussuaq (Greenland).

Among foreign carriers, Sabena discontinued its Montreal-Brussels service, while Austrian Airlines ceased serving Toronto-Vienna. Austrian Airlines hopes to reinstate its Toronto-Vienna service in 2002. Icelandair also cancelled its Halifax-Reykjavik service, and Tarom discontinued serving Montreal-Bucharest.

The current market situation is considered very fluid. It is expected that other cancelled routes may be reinstated as the economic climate improves.

The failure of Canada 3000 had a number of effects on international services. In the immediate wake of the bankruptcy announcement, SkyService and Air Transat began an emergency program to repatriate stranded passengers. In the longer term, Air Transat and SkyService are developing plans with tour operators to take over part of Canada 3000's former southern program.

In more general terms, there was a five per cent overall growth in international traffic between 1999 and 2000. The strongest growth occurred in the Pacific market and southern destinations. The growth rate between 2000 and 2001 was only 1.2 per cent overall. It should be noted, however, that the growth rate for the first eight months of the year was 5.8 per cent, but dropped dramatically in the final four months after September 11 to an estimated

-9.4 per cent. Table 12-33 sets out the number of international destinations served from National Airports System (NAS) airports as of December 31, 2001. The year 2001 saw a moderate decrease in the number of airlines and markets served internationally. Table 12-34 shows the change in international air passenger traffic over the past decade.

**TABLE 12-33: NUMBER OF US AIRPORTS SERVED BY NAS AIRPORTS (SCHEDULED NON-STOP ONLY) AS OF DECEMBER 31, 2001**

Airport	Number of US Airports	Number of Airlines <sup>1</sup>	
		Canada	US
Calgary	11	2	6
Edmonton	5	2	2
Halifax	4	2	1
Kelowna	1	-	1
London	1	-	1
Montreal (Dorval)	20	1	5
Montreal (Mirabel)	2	1	-
Ottawa	10	1	5
Quebec City	3	1	2
Regina	1	-	1
Saskatoon	1	-	1
St. John's	1	1	-
Thunder Bay	1	-	1
Toronto	59	2	9
Vancouver	22	3	7
Victoria	1	-	1
Whitehorse	2	1	1
Winnipeg	2	1	1

Note: Only those airports with scheduled transborder services are listed.

<sup>1</sup> Regional airlines are counted as an airline only if they do not code-share with a major airline.

Source: Official Airline Guide and airline timetables

**TABLE 12-34: CANADA-INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 2000**

Period	(Millions of passengers)			
	Atlantic	Pacific	Southern	Total
1991	4.776	1.000	2.222	7.998
1992	5.221	1.140	2.353	8.714
1993	5.345	1.288	2.444	9.077
1994	5.802	1.478	2.560	9.840
1995	6.147	1.760	2.614	10.521
1996	6.413	1.920	2.574	10.907
1997	6.699	2.304	2.905	11.908
1998	7.112	2.312	3.159	12.582
1999	7.390	2.418	3.330	13.138
2000	7.510	2.649	3.630	13.789
Period	(Per cent change)			
	Atlantic	Pacific	Southern	Total
1991-92	9.3	14.0	5.9	9.0
1992-93	2.4	13.0	3.9	4.2
1993-94	8.6	14.8	3.9	8.2
1994-95	6.0	19.1	3.0	7.2
1995-96	4.3	9.1	(1.5)	3.7
1996-97	4.5	20.0	12.9	9.2
1997-98	6.2	0.3	8.7	5.7
1998-99	3.9	4.6	5.4	4.4
1999-2000	1.6	9.6	9.0	5.0

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4, and 6, and Transport Canada

As of December 31, 2001, direct scheduled services were available between Canada and 44 countries. Of these countries, 27 are served by Canadian carriers. A summary of the number of destinations served from each NAS airport is given in Table 12-35.

**TABLE 12-35: NUMBER OF INTERNATIONAL DESTINATIONS SERVED BY THE NATIONAL AIRPORTS SYSTEM AIRPORTS (SCHEDULED DIRECT ONLY) AS OF DECEMBER 31, 2001**

<i>Airport</i>	<i>Number of</i>	<i>Number of Airlines<sup>1</sup></i>	
	<i>International Destinations</i>	<i>Canada</i>	<i>International</i>
Calgary	6	2	1
Edmonton	4	2	1
Halifax	5	2	1
Moncton	1	-	1
Montreal (Dorval)	22	1	12
Montreal (Mirabel)	3	1	-
Ottawa	1	1	-
Quebec City	1	1	-
St. John's	2	1	1
Toronto	52	2	23
Vancouver	21	2	13
Winnipeg	1	1	-

Note: Includes only NAS Airports with scheduled international service.  
Includes seasonal services and direct, same-plane service.

Source: *Official Airline Guide*





# PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

# 13

*Improvements in transportation productivity and logistics are vitally important to economic growth. In 2000, the spike in fuel prices led to transport price increases growing faster than the inflation in the economy, rail freight transportation being an exception. In 2001, most indicators point to a contraction of output and prices, and a deterioration of financial returns, particularly in the airline industry.*

This chapter examines the economic and financial performance<sup>1</sup> of transport industries in Canada over the last four years, highlighting the most recent years for which data is available. Tables 13-3 to 13-6 at the end of this chapter show price and output indicators, cost structures, productivity and unit costs<sup>2</sup> indicators, and financial indicators, respectively.

After a period of robust annual productivity growth in the first half of the 1990s, productivity increases in selected transport industries<sup>3</sup> slowed during the second half of the decade to 1.6 per cent a year. Productivity growth in 2000 reached 2.4 per cent.

Table 13-1 shows performance indicators for selected transport industries and the economy.

In the mid-1990s, the prices of transport services fell in real terms by 2.3 per cent a year. From 1996 to 2000, they increased by 0.6 per cent. Most of the increases were recorded in 2000. More than 50 per cent of the nominal increases in transport prices in 2000 were related to higher fuel prices. In 2001, transport prices returned to a pattern of price increases that were below the inflation rate.

With lower transport prices in the first half of the 1990s and the increasing trade orientation of the Canadian economy, the annual output gains of large transport firms doubled the growth of the economy in the early 1990s. From 1996 to 2000, transport output grew slightly more than in the economy. In the first half of 2001, the business sector grew by 1.8 per cent in the selected transport industries. In the second half of the year, the economy

**TABLE 13-1: PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY**

	Annual per cent changes		
	1991 – 1996	1996 – 2000	2000 – 2001
<b>Total Factor Productivity</b>			
Selected Transport Industries	3.6	1.6	2.4 <sup>1</sup>
Business Economy	1.5	1.4	1.1
<b>Fuel Efficiency</b>	0.3	3.2	4.7
<b>Price</b>			
Selected Transport Industries	(0.6)	2.0	0.1 <sup>2</sup>
Business Economy	1.7	1.5	2.8
<b>Output</b>			
Selected Transport Industries	6.4	5.8	1.6 <sup>2</sup>
Business Economy	2.9	5.2	1.8 <sup>2</sup>

1 Change 2000/01

2 Based on data for the first half of the year 2001

Source: Transport Canada, based on Statistics Canada files

grew marginally by 0.4 per cent. This flattening in economic activities, and the aftermath of the September 11 terrorist attacks in the United States, resulted in marginal growth of the transport sector in the year 2001.

## RAIL FREIGHT INDUSTRY

A strong productivity growth and intense cost reduction efforts allowed Canadian National (CN) and Canadian Pacific Railways (CPR) to enjoy good financial performance in recent years. Despite higher fuel prices in 2000, rail freight rates continued to decline, and both carriers reported further improvement in operating ratios. In 2001, the operating revenues and income of the Canadian operations of CN and CPR declined slightly.

1 Different database definitions, assumptions, coverage, reference years and calculation procedures may produce different results and affect observed trends in productivity and prices. Changes in data availability lead to methodological modifications that affect the results. This explains differences between the series shown in this annual report and those presented in previous annual reports.

2 Unit costs are costs per unit of production.

3 Larger firms in rail freight, air and trucking, or 93 per cent of the revenues of all the firms reviewed in this chapter.

## PRICE AND OUTPUT INDICATORS

From 1996 to 2000, the output of CN and CPR operations in Canada grew, on average, by 3.2 per cent a year. Rail freight prices declined by 0.6 per cent a year. In 2000, despite a 40 per cent spike in fuel prices, rail freight rates continued to decline. In terms of commodity groupings, grain rates<sup>4</sup> increased by five per cent between 1996 and 1998, but declined in the next two years by 6.2 per cent. Over the 1996 – 2000 period, freight rates of bulk commodities declined 5.3 per cent a year, with a revenue yield around 25 per cent lower than that of all non-bulk commodities. Intermodal services represented the most significant source of rail traffic growth (44 per cent), while total rail traffic grew by 16 per cent. Still, the average yield of intermodal services is significantly higher than that of other traffic. In the first half of 2001, revenues for prices and traffic were basically unchanged from the previous year.

## COST AND PRODUCTIVITY INDICATORS

Rail freight is the most capital-intensive transportation activity, with 30 per cent of its total costs related to capital-related expenditures. In 2000, the labour cost share continued its decline and accounted for 35 per cent of total costs, a drop of 3.6 per cent. Fuel costs, as a result of higher diesel prices, accounted for ten per cent of total costs, up from seven per cent in 1999. The two major freight railways in Canada have showed impressive productivity growth since 1996, with an average productivity growth rate of 4.4 per cent a year. In 2000, railways surpassed the trends observed in other modes, showing a productivity gain of 9.6 per cent. These gains allowed railways to reduce their unit cost annually by almost 3.1 per cent over the 1996 – 2000 period. In 2000, unit costs fell by 5.8 per cent, despite a major increase (3.3 per cent) in factor prices.<sup>5</sup>

## FINANCIAL PERFORMANCE

Since 1996, productivity gains have allowed the carriers to lower freight costs and improve financial results at the same time. Operating income in 2000 increased by \$250 million and the operating ratio declined for the fifth consecutive year since 1995, reaching 79.3 per cent. In 2001, the combined operating income from the Canadian operations of CN and CPR declined slightly. Regional railways accounted for 11 per cent of total operating revenues of freight railways in Canada, and they had an average operating ratio of 91 per cent in 2000.

## VIA RAIL

VIA Rail's traffic continued to grow in 2000 and 2001 despite hefty price increases. The combination of higher prices and cost reductions brought VIA Rail's cost recovery close to 50 per cent.

## PRICE AND OUTPUT INDICATORS

In 2000, VIA Rail's revenues grew by 7.3 per cent, the result of prices rising by 6.1 per cent and output growing by 1.1 per cent. From 1996 to 2000, the prices of VIA Rail's passenger services increased by 4.1 per cent a year on average, exceeding the inflation rate. Yet output rose by 2.6 per cent annually. As a result, VIA Rail was able to increase its operating revenues by 30.2 per cent over this period. The willingness of consumers to pay more for VIA Rail's services was illustrated by a traffic gain of 1.5 per cent in 2001, despite a 10.7 per cent price increase.

## PRODUCTIVITY AND UNIT COST INDICATORS

In 2000, the share of fuel costs in total costs increased at VIA Rail as it did in rail freight transportation in general. However, VIA Rail's hedging strategies<sup>6</sup> limited fuel price increases to 16 per cent. Still, fuel accounts for less than five per cent of VIA Rail's costs. In 1999 and 2000, VIA Rail's productivity gains were close to six per cent per year, following a period of stagnation between 1996 and 1998. Total unit costs in 2000 fell slightly, yet they were 13 per cent lower than in 1996. In the first half of the 1990s, unit costs had already dropped by 19 per cent.

## FINANCIAL PERFORMANCE

VIA Rail has increased the proportion of total costs it recovers every year since 1991. Two thirds of this improvement was achieved from cost reductions and one third from price increases. When all costs are included, however, VIA Rail's cost recovery<sup>7</sup> is still below 50 per cent.

## TRUCKING INDUSTRY

In 2000, the effect of higher fuel prices on trucking freight rates was partially offset by increased efficiency. Output continued to be strong. Operating ratios edged below 95 per cent. In 2001, weak trucking prices and output contributed to rising operating ratios.

4 Some of the increases result from adjustments to correct rate anomalies following the abolition of the *Western Grain Transportation Act* (WGTA).

5 Factor prices refer to the average price paid by the transport carriers to purchase the factors of production they use.

6 A hedging strategy is one where a company negotiates a fixed price for fuel purchases over a period of time with suppliers.

7 The measures of cost recovery here are different from those published by VIA Rail. This report takes into account overhead costs, depreciation and the opportunity cost of capital of net fixed assets. Extraordinary items, however, are excluded.



## PRICE AND OUTPUT INDICATORS

In 2000, industry revenues rose by 9.8 per cent and prices by 3.3 per cent. Fuel price increases of 28 per cent were a major factor in price increases. Output continued to grow at a robust rate of 6.3 per cent, a rate still lower, however, than the average ten per cent in previous years. In real terms, overall trucking prices have declined by 0.5 per cent since 1996. Whereas domestic trucking prices fell by 3.2 per cent, the prices of transborder services increased by 4.3 per cent. Preliminary figures indicate that output peaked in the first quarter of 2001 and declined in every other quarter of the year. Prices have also been soft due to reduced fuel prices and the slowdown in the North American economy.

## PRODUCTIVITY AND COST INDICATORS

Until 1999, the trucking industry exhibited a stable cost structure. In 2000, the fuel cost share increased by 2.1 percentage points. Total factor productivity in the trucking industry increased by 2.7 per cent in 2000. The industry reacted to the spike in diesel prices by improving its fuel management practices; fuel efficiency gains reached 6.5 per cent. In 2000, trucking unit costs rose by 2.7 per cent. Without the effect of higher fuel prices, total unit cost would have been stable.

Between 1996 and 2000, total factor productivity growth reached 1.6 per cent. Over the same period, unit costs increased by 0.8 per cent, half the rate of inflation in the economy.

## FINANCIAL PERFORMANCE

In 2000, as prices increased more rapidly than unit costs, operating ratios edged below 95 per cent, a performance in line with previous years' trends. The trucking industry can be viable with an operating margin of about five per cent of operating revenues. Large trucking carriers maintained their profitability in the first two quarters of 2001. The operating ratio of the larger carriers remained the same in spite of softer freight rates prevailing in the trucking industry.

## INTERCITY BUS INDUSTRY

Declining productivity and factor price increases led to a unit cost increase of nine per cent in 2000. Price increases and strong output growth allowed the bus industry to achieve an operating ratio of 89 per cent, enough to cover the cost of its capital.

## PRICE AND OUTPUT INDICATORS

Revenues for the intercity bus industry grew by 15 per cent in 2000. Prices rose by 3.5 per cent, whereas output increased by 11 per cent. The relative importance of the different sources of industry revenues remained the same: 84 per cent from passenger services, 12 per cent from parcel services, and four per cent from various other activities.

The share of scheduled bus services was stable, at 40 per cent of total intercity bus passenger service revenues. The revenue share of charter and tour services reached 46 per cent in 2000, leaving specialized intercity bus services, such as limousine and sightseeing services, with a smaller share of total industry revenues than in previous years.

The changes in demand for each type of intercity bus service were asymmetrical to price changes. Demand for scheduled intercity bus services was flat between 1996 and 2000, a period over which nominal prices for those services went up by 14 per cent. Conversely, activity levels for other bus services increased by 35 per cent, while their prices fell by seven per cent. Over the 1996 – 2000 period, the output of the intercity bus industry increased by 4.1 per cent a year while its prices rose by 0.5 per cent a year.

## COST AND PRODUCTIVITY INDICATORS

Before 1999, the cost structure of the bus industry remained relatively stable. The labour cost share dropped by 3.8 per cent in 2000. Fuel, other variable and capital costs gained one, two, and half a percentage points, respectively.

While total factor productivity declined in 2000, it has increased overall by 0.9 per cent a year since 1996. However, labour productivity and fuel efficiency increased by 4.7 and 4.2 per cent, respectively. Fuel efficiency significantly improved in 2000, growing by 4.9 per cent, which mitigated the impact of a 29 per cent fuel price increase. Capital productivity declined by 5.7 per cent a year between 1996 and 2000, reflecting an increase in capital intensity<sup>8</sup> in the industry. Low productivity gains were not enough to offset factor price changes. As a result, overall unit cost increased by 1.3 per cent a year between 1996 and 2000. Much of the increase occurred in 2000, when unit costs rose by 8.9 per cent, due to productivity declining by 3.6 per cent and factor price increasing by 4.9 per cent.

8 Capital intensity is the ratio of fixed assets over revenues in constant prices.

## FINANCIAL PERFORMANCE

Before 2000, operating ratios in the bus industry averaged 85 per cent. Productivity gains made by the industry were responsible for the improvement in the profitability of the intercity bus industry. In 2000, through price increases, the industry achieved an operating ratio of 89 per cent, enough to cover its cost of capital.

## URBAN TRANSIT SYSTEMS

In 2000, the revenues (excluding subsidies) for urban transit and urban service operators rose by 7.8 per cent, a result of both higher prices and increased ridership. In spite of flat productivity growth, cost recovery continued to climb steadily.

## PRICE AND OUTPUT INDICATORS

After two years of marginal price increases (1997 to 1999), transit system prices grew by 4.3 per cent in 2000, a pace similar to that of the early 1990s. Still, the output of transit systems increased by 3.4 per cent. In the past, such price increases led to declining ridership. Between 1996 and 2000, prices increased by 2.1 per cent a year while output grew by 3.2 per cent a year.

## PRODUCTIVITY AND COST INDICATORS

Transit systems are among the most labour- and capital-intensive of all transport industries, with a respective share of 51 and 27.9 per cent of total costs. The labour cost share in 2000 was 1.8 per cent lower than in 1999, and the cost of fuel and other materials and services slightly increased its share of total costs.

Total factor productivity of transit systems in 2000 was basically the same as in 1999, 4.1 per cent higher than in 1996, but still below the peak level of 1995. In spite of a 15 per cent<sup>9</sup> increase in fuel prices, fuel efficiency declined by 4.4 per cent in 2000. This confirmed the previous years' trend of deteriorating fuel efficiency. Both labour and capital productivity increased in 2000. Since 1996, labour productivity rose annually by 2.5 per cent a year. The decline of capital productivity, 1.3 per cent a year, corresponds to increasing capital intensity.

Transit costs per unit of output rose by 3.9 per cent in 2000, but were marginally higher than in 1996. Since 1996, capital costs have exhibited the largest increases, 3.8 per cent a year, followed by fuel costs at 2.2 per cent a year. The reduction of unit labour costs averaged 1.6 per cent a year.

## FINANCIAL PERFORMANCE

The total cost of transit systems was estimated at \$4.3 billion in 2000. Cost recovery has been increasing steadily since 1996, reaching 48 per cent in 2000. Annual operating subsidies have been relatively stable, at \$1.5 billion, while capital subsidies declined 30 per cent in 2000 from their 1999 peak.

## TRANSIT SYSTEM IN SELECTED PROVINCES

This section examines key performance indicators of transport systems for British Columbia, Alberta, Ontario and Quebec, as shown in Table 13-2.

TABLE 13-2: FINANCIAL INDICATORS OF SELECTED PROVINCIAL TRANSIT SYSTEMS, 2000

	Quebec	Ontario	Alberta	British Columbia	Canada <sup>1</sup>
Price Levels (Canada = 100.0)	84.5	120.9	71.2	91.6	100.0
Total Factor Productivity (Canada = 100.0)	118.8	92.0	101.0	95.9	100.0
Total Unit Cost (Canada = 100.0)	93.4	110.3	84.4	100.4	100.0
Cost Recovery (per cent)	42.2	50.3	39.7	42.6	46.4
Revenue Shortfall per passenger (millions of dollars)	1.36	1.60	1.58	2.02	1.55

1 Includes the transit systems of all provinces.

Source: Transport Canada, based on Statistics Canada files

Ontario stands out as having a productivity and unit cost performance well below the national average. However, it did achieve the highest cost recovery, but only because it charged the highest fares (per kilometre) in the country. Alberta had the lowest unit costs, which nonetheless recorded the lowest cost recovery, as its fares were also the lowest in the country. Quebec had the smallest revenue shortfall, at \$1.36 per passenger. British Columbia had the greatest revenue shortfall, at more than \$2 per passenger, because of low prices relative to unit costs, and the fact that transit riders were travelling over longer average distances than in other provinces.

## AIR TRANSPORT INDUSTRY

In 2000, the group of air carriers included in this analysis generated total revenues of \$13 billion, 11.7 per cent more than in 1999. The economic slowdown in 2001 and the events of September 11 crystallized the fragility of the industry.

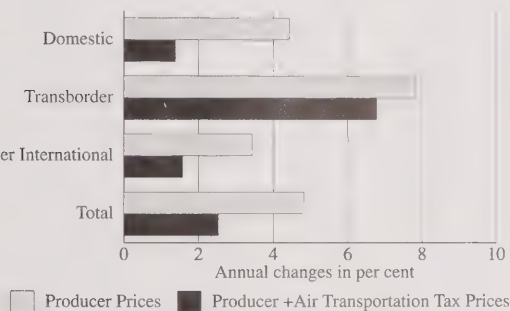
9 The increase was in the order of 33 per cent in provinces where transit systems do not use fuel as motive power.

## PRICE AND OUTPUT INDICATORS

The 1996 – 2000 period was one of strong growth for the air transport industry, with total revenues growing by 11 per cent a year, transport output by 5.8 per cent, and airfares by 4.8 per cent. Since inflation in the economy was limited to 1.5 per cent a year, this suggests that airfares were increasing in real terms by 3.3 per cent a year over this period. The changes in airfare prices, measured at the carriers' level, were affected by navigation fees, which replaced the Air Transportation Tax. When this is factored in, air prices increased in real terms by 1.1 per cent.

Figure 13-1 shows price trends in the airline industry with and without the Air Transportation Tax, from 1996 to 2000.

**FIGURE 13-1: PRICE TRENDS IN THE AIRLINE INDUSTRY, WITH AND WITHOUT THE AIR TRANSPORTATION TAX, 1996 – 2000**



Source: Transport Canada based on Statistics Canada and carriers' files

In 2000, the air transport industry enjoyed rising prices and demand. Airfares increased by 7.8 per cent, and passenger and freight services both grew by 3.9 per cent. The prices of domestic passenger services rose by 7.8 per cent, but output fell by 0.8 per cent. Price increases in transborder services were about 4.7 per cent (a rate much lower than in recent years) and transborder demand grew 15 per cent. In international markets, fares had been stable, with minimal increases in recent years. Because fares in international markets are more sensitive to fuel price increases, they grew by 9.9 per cent in 2000. Demand for foreign travel to markets outside the United States continued to be strong, a 6.8 per cent increase, which is in line with previous trends. Revenues from freight activity increased on average by five per cent a year between 1996 and 2000, thanks to respective one and four per cent increases in the volume of air freight and cargo rates.

During the first nine months of 2001, passenger traffic was stable, and profits fell by seven per cent, owing to reduced fuel costs and heightened competition in the domestic market. The impact of September 11 can be illustrated by the 19 per cent reduction in Air Canada passenger traffic, followed by an 11 per cent drop in the fourth quarter. Average yields fell by 17 per cent in September, and by ten per cent in the fourth quarter. Other carriers did better. WestJet's traffic increased by 50 per cent in the fourth quarter.

## PRODUCTIVITY AND UNIT COST INDICATORS

The cost structure of the airline industry was affected by a 54.7 per cent increase in fuel prices in 2000, which raised the fuel cost share from 12 to 16.4 per cent. The capital cost share declined to less than 15.5 per cent of total cost. Leasing and interest expenses, which represent fixed obligations that have to be met from the operations' revenues, represent almost 73 per cent of the capital costs of Canadian airlines. In comparison, they are estimated to account for 25 per cent of the capital costs of US airlines. This highlights the financial vulnerability of Canadian carriers to internal (e.g. economic slowdown) and external (e.g. September 11 events) shocks.

In 2000, total factor productivity of the airline industry dropped by 1.6 per cent and was marginally higher than in 1996. While fuel efficiency improved by two per cent in 2000, labour productivity dropped by 3.8 per cent, the first drop since 1991. Capital productivity increased by 3.6 per cent, reflecting the disinvestment strategies of some carriers. The robust output growth situation — more than six per cent a year since 1996 in air transportation — should have been conducive to productivity improvement. Over that period of strong demand, however, the industry faced significant structural changes, a mix of consolidation of some carriers and very significant expansion of others. This made it difficult for the industry to match resource utilization and demand, which in turn translated into poor productivity performance.

Since 1996, the air industry's unit costs have increased annually by 4.5 per cent, due to marginal productivity gains and factor prices rising by 4.7 per cent a year. These factors, together, added almost \$1.8 billion<sup>10</sup> to the cost base of the airlines. Over the same period, revenues increased by one quarter of this amount. In 2000, the situation worsened, with negative productivity gains and factor prices increasing by 8.9 per cent. As a result, unit costs rose by 10.8 per cent.

10 This estimated cost increase assumes the same level of output as in 1997.



## FINANCIAL PERFORMANCE

In 2000, the airline industry posted an operating income of \$26 million. The consolidated income of Air Canada and Canadian Airlines International Limited (CAIL) showed a loss of \$101 million, compared to an operating profit of \$127 million for the other carriers covered in this analysis. In 2001, Air Canada's profitability was adversely

affected by increased domestic competition, the economic slowdown and the impact of September 11. Air Canada reported an operating loss of \$731 million. Total loss before income tax reached \$991 million. Of the publicly traded independent carriers, only WestJet was profitable. Canada 3000 went under and Air Transat, as a result of large unusual charges, faced some financial losses in 2001.

## SCOPE OF ANALYSIS

**Rail Freight:** CN, CPR and regional carriers (financial indicators only).

**Rail Passenger:** VIA Rail.

**Trucking:** For-hire trucking firms with annual sales equal to or greater than \$1 million. (Excludes carriers whose main activity is the movement of household goods.)

**Intercity Bus:** Scheduled carriers, charter operators and limousine and sightseeing services.

**Urban Transit Systems:** Transit authorities, members of the Canadian Urban Transit Association.

**Air Transport Industry:** Most of Levels I and II air carriers operating in 2000, namely Air Canada and affiliates, Canadian Airlines, Canadian Regional Airlines, Air Transat, Canada 3000, Royal Air, WestJet and Bradley Air Services.

**Public Carriers:** VIA Rail and Urban Transit Systems.

**Business Carriers:** All other carriers.

TABLE 13-3: PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 – 2000

	Price changes (Annual per cent increase)				Output changes (Annual per cent increase)			
	1991 – 1996	1998/99	1999/2000	1996 – 2000	1991 – 1996	1998/99	1999/2000	1996 – 2000
<b>CN and CPR</b>								
Agriculture	N/A	(2.6)	(3.7)	(0.4)	N/A	(2.4)	18.5	2.3
Other Bulk	N/A	(7.4)	(11.4)	(5.3)	N/A	5.7	9.1	5.3
Other Commodities	N/A	4.3	(5.6)	0.3	N/A	2.9	9.1	5.1
Intermodal	N/A	(0.9)	(7.4)	(1.3)	N/A	9.2	16.8	9.3
Total	(1.1)	(0.7)	(2.2)	(0.6)	1.6	1.7	7.3	3.2
<b>VIA Rail</b>								
Corridor	3.3	(0.9)	8.8	5.1	(0.7)	9.7	2.4	2.5
Long Haul	6.5	(6.9)	1.6	2.4	2.5	18.3	(1.6)	2.3
Remote-Regional	1.5	(7.2)	(0.7)	2.2	(0.2)	12.2	1.6	3.0
Total	4.0	(3.0)	6.1	4.1	0.1	12.3	1.1	2.6
<b>Trucking</b>								
Intra-Provincial	(0.2)	(2.3)	5.1	0.6	7.8	1.9	4.1	4.5
Inter-Provincial	(0.9)	1.1	0.3	0.7	7.8	2.4	6.3	3.0
Transborder	0.3	1.9	2.8	2.5	15.6	18.8	5.7	10.3
Total	(0.2)	0.1	2.8	1.3	10.0	9.3	6.9	6.9
<b>Intercity Bus Industry</b>								
Regular Bus Services	0.6	3.3	8.0	3.4	(5.1)	(6.0)	6.4	0.0
Charter Bus Services	(0.7)	4.2	2.4	(1.3)	7.4	(11.4)	21.7	7.0
Total	0.8	1.7	2.7	0.5	(0.0)	(4.0)	11.9	4.1
<b>Transit</b>								
Total	4.9	0.7	4.3	2.1	(2.0)	5.6	3.4	3.2
<b>Airline Industry</b>								
Domestic Passenger	(0.1)	5.6	7.8	4.4	2.8	2.3	(0.8)	3.6
International Passenger	(0.6)	6.1	7.7	5.1	8.1	6.3	10.0	8.3
Air Freight	(2.8)	(1.0)	9.3	3.7	4.5	8.3	(10.5)	1.0
Total	(0.5)	5.2	7.7	4.6	5.4	4.6	3.3	6.1
<b>Larger Transport Industries<sup>1</sup></b>								
Freight	(0.8)	(0.2)	1.9	0.9	7.1	6.7	5.4	5.4
Passenger	(0.3)	5.9	7.8	4.8	5.4	4.4	5.0	6.1
Total	(0.6)	1.6	3.7	2.0	6.4	6.2	5.4	5.8
<b>Total Transport<sup>2</sup></b>								
Business Carriers	(0.6)	1.6	3.7	2.1	6.3	5.9	5.6	5.7
Public Carriers	4.8	0.3	4.4	2.3	(1.8)	6.3	3.2	3.2
Total	(0.3)	1.3	3.8	2.0	5.7	6.2	5.4	5.6

1 CN and CPR, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 13-4: COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991 AND 1998 – 2000

		(Per cent of total costs)							
		<i>CN and CPR</i>	<i>VIA Rail</i>	<i>Trucking</i>	<i>Intercity Bus</i>	<i>Transit</i>	<i>Airlines</i>	<i>Larger Industries<sup>1</sup></i>	<i>Total</i>
<b>1991</b>	Variable	69.9	80.4	83.7	81.4	76.1	80.5	78.4	78.2
	Labour	40.5	40.1	44.5	39.9	49.8	26.0	37.0	38.8
	Fuel	8.3	3.3	11.3	8.0	3.9	14.2	11.3	10.1
	Other	21.1	37.0	27.9	33.6	22.4	40.3	30.0	29.2
	Capital	30.1	19.6	16.3	18.6	23.9	19.5	21.6	21.8
<b>1998</b>	Variable	71.3	83.3	84.8	79.1	71.2	81.9	81.0	80.0
	Labour	38.7	40.1	42.2	41.6	51.8	21.6	34.4	36.4
	Fuel	7.9	3.8	12.7	9.1	5.0	11.9	11.4	10.6
	Other	24.7	39.4	29.9	28.4	14.4	48.4	35.2	33.0
	Capital	28.7	16.7	15.2	20.9	28.8	18.1	19.0	20.0
<b>1999</b>	Variable	70.6	83.3	84.4	79.0	70.9	82.2	81.0	79.9
	Labour	38.5	41.1	41.9	41.6	51.7	22.2	34.5	36.5
	Fuel	7.2	3.8	12.6	8.4	5.1	12.0	11.3	10.5
	Other	24.9	38.4	30.0	29.0	14.1	48.0	35.2	32.9
	Capital	29.4	16.7	15.6	21.0	29.1	17.8	19.0	20.1
<b>2000</b>	Variable	70.1	81.8	85.6	78.0	70.1	84.5	82.4	81.1
	Labour	34.9	38.8	40.6	37.9	49.8	22.3	33.1	34.9
	Fuel	10.1	4.6	14.7	9.4	5.9	16.4	14.5	13.4
	Other	25.1	38.4	30.2	30.7	14.6	45.8	34.9	32.8
	Capital	29.9	18.2	14.4	22.0	29.9	15.5	17.6	18.9

1 CN and CPR, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 13-5: EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1991 – 2000

		Productivity (Annual per cent increase)				Unit Costs (Annual per cent increase)			
		1991 – 1996	1998/99	1999/2000	1996 – 2000	1991 – 1996	1998/99	1999/2000	1996 – 2000
<b>CN and CPR</b>	Labour	6.8	5.9	13.2	7.9	(2.2)	(1.6)	(14.6)	(7.2)
	Fuel	2.0	9.9	6.0	5.3	(1.3)	(9.9)	32.7	0.1
	Capital	2.4	0.9	7.6	1.8	(5.0)	1.2	(4.2)	(0.3)
	Total	4.2	4.2	9.6	4.4	(2.6)	(2.2)	(5.8)	(3.1)
<b>VIA Rail</b>	Labour	6.8	11.1	9.4	4.4	(4.7)	(9.3)	(5.8)	(2.8)
	Fuel	1.2	12.8	(3.4)	2.4	(0.2)	(10.9)	19.9	0.3
	Capital	5.2	(17.1)	3.2	(4.3)	(4.7)	(8.0)	8.5	(2.9)
	Total	4.7	7.8	4.5	2.9	(3.6)	(11.5)	(0.2)	(3.4)
<b>Trucking</b>	Labour	4.3	2.5	1.6	2.1	(2.2)	(0.0)	(0.0)	0.5
	Fuel	(1.6)	2.1	6.5	2.6	2.2	(0.2)	20.5	3.9
	Capital	1.7	0.3	(0.9)	(1.1)	(2.7)	3.0	(4.7)	0.2
	Total	1.6	0.9	2.7	1.6	(0.7)	0.7	3.0	0.8
<b>Intercity Bus Industry</b>	Labour	2.5	(0.4)	4.5	4.7	(0.1)	1.8	(1.0)	(1.2)
	Fuel	(2.3)	8.4	6.7	4.2	1.2	(6.1)	21.6	2.6
	Capital	2.2	(2.0)	(9.9)	(5.7)	(0.7)	2.3	14.4	5.2
	Total	2.6	(0.7)	(3.6)	0.9	(1.1)	1.7	8.9	1.3
<b>Transit</b>	Labour	(1.4)	1.2	1.7	2.5	4.5	(2.0)	(0.2)	(1.6)
	Fuel	(0.1)	(1.3)	(4.4)	(2.1)	9.5	0.0	20.3	3.1
	Capital	(3.0)	(1.9)	0.7	(1.0)	4.8	(0.5)	6.7	3.8
	Total	(0.2)	0.9	0.0	1.1	2.9	(1.7)	3.9	0.4
<b>Airline Industry</b>	Labour	7.3	2.9	(3.8)	0.5	(4.3)	4.6	10.8	2.9
	Fuel	1.5	2.2	2.0	2.2	(0.9)	2.2	51.7	6.1
	Capital	7.5	3.0	3.6	3.9	(3.9)	(1.4)	(3.8)	(0.2)
	Total	5.5	3.3	(1.6)	0.2	(2.6)	1.4	10.6	4.5
<b>Larger Transport Industries<sup>1</sup></b>	Labour	5.8	3.3	2.5	3.0	(2.7)	0.6	(0.8)	(0.7)
	Fuel	0.3	3.2	4.7	2.8	0.1	(0.7)	33.2	4.2
	Capital	3.8	1.3	3.0	1.4	(3.9)	1.0	(4.3)	(0.1)
	Total	3.6	2.4	2.4	1.6	(1.9)	0.4	3.9	1.3
<b>Total Transport<sup>2</sup></b>	Business Carriers	3.6	2.3	2.3	1.6	(1.9)	0.4	4.0	1.3
	Public Carriers	0.4	1.6	0.5	1.3	2.0	(3.0)	3.5	(0.0)
	Total	3.2	2.2	2.1	1.6	(1.3)	(0.0)	3.9	1.1

1 CN and CPR, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 13-6: FINANCIAL PERFORMANCE OF TRANSPORTATION INDUSTRIES, 1996 – 2000

		----- Millions of dollars unless otherwise specified -----				
		1996	1997	1998	1999	2000
<b>Class I Freight Railways – Canadian Operations</b>	Operating Revenues	6,150	6,778	6,436	6,502	6,825
	Operating Expenses <sup>1</sup>	5,643	5,880	5,387	5,375	5,411
	Operating Ratio <sup>1</sup> (per cent)	91.8	86.8	83.7	82.7	79.3
	Net Operating Income	507	897	1,049	1,127	1,415
<b>Regional Railways</b>	Operating Revenues	666	714	783	818	905
	Operating Expenses	625	634	690	748	821
	Operating Ratio (per cent)	93.8	88.7	88.1	91.4	90.6
	Net Operating Income	41	80	93	70	85
<b>Trucking Industry</b>	Operating Revenues	12,763	14,061	14,600	15,970	17,540
	Operating Expenses	12,178	13,154	13,633	15,012	16,426
	Operating Ratio (per cent)	95.4	93.5	93.4	94.0	93.7
	Net Operating Income	584	907	967	958	1,114
<b>Air Industry</b>	Operating Revenues	8,762	9,823	10,674	11,664	13,024
	Operating Expenses	8,693	8,836	10,561	11,369	12,998
	Operating Ratio (per cent)	99.2	89.9	98.9	97.5	99.8
	Net Operating Income	69	988	113	295	26
<b>Intercity Bus Industry</b>	Operating Revenues	617	593	657	641	737
	Operating Expenses	540	513	557	545	658
	Operating Ratio (per cent)	87.5	86.5	84.8	85.1	89.4
	Net Operating Income	77	80	100	96	78
<b>Business Carriers</b>	Operating Revenues	28,956	31,970	33,151	35,595	39,032
	Operating Expenses	27,678	29,017	30,828	33,050	36,314
	Operating Ratio (per cent)	95.6	90.8	93.0	92.8	93.0
	Net Operating Income	1,278	2,953	2,322	2,545	2,718
<b>Transit Industry</b>	Operating Revenues	1,621	1,712	1,744	1,855	2,000
	Operating Expenses	3,735	3,783	3,865	4,011	4,313
	Operating Subsidies	1,561	1,495	1,523	1,492	1,512
	Capital Subsidies	494	641	858	1,068	754
	Cost Recovery Ratio (per cent)	43.4	45.3	45.1	46.2	46.4
<b>VIA Rail</b>	Operating Revenues	172	183	191	209	224
	Operating Expenses	478	468	461	458	461
	Operating Subsidies	205	196	182	170	170
	Capital Subsidies	40	40	43	47	50
	Cost Recovery Ratio (per cent)	35.9	39.1	41.5	45.5	48.5

1 Excludes restructuring charges.

Source: Transport Canada, based on Statistics Canada and carriers' files





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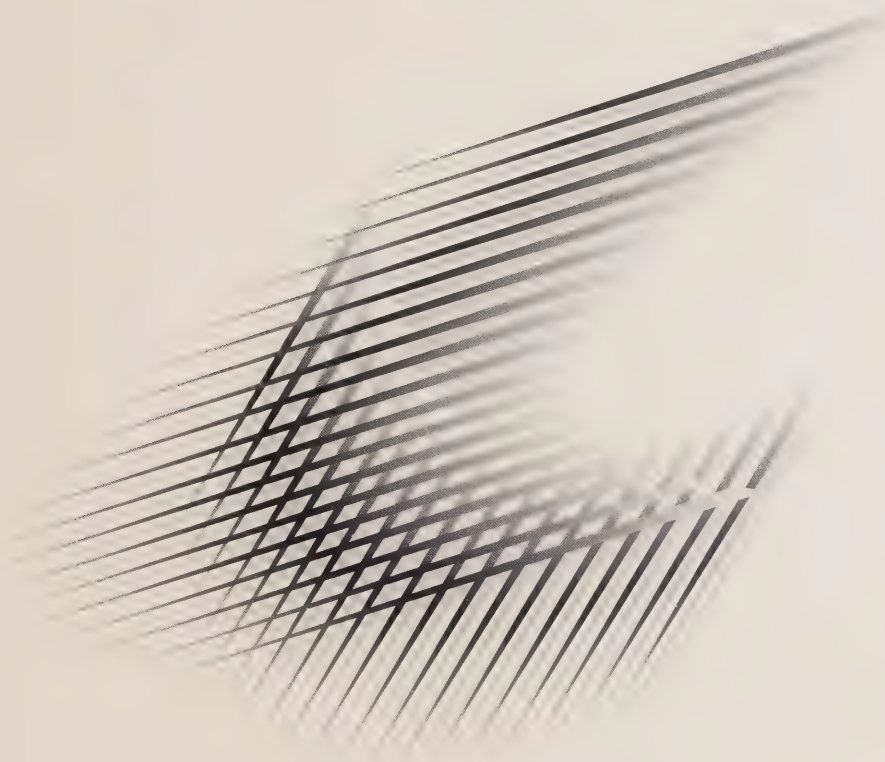


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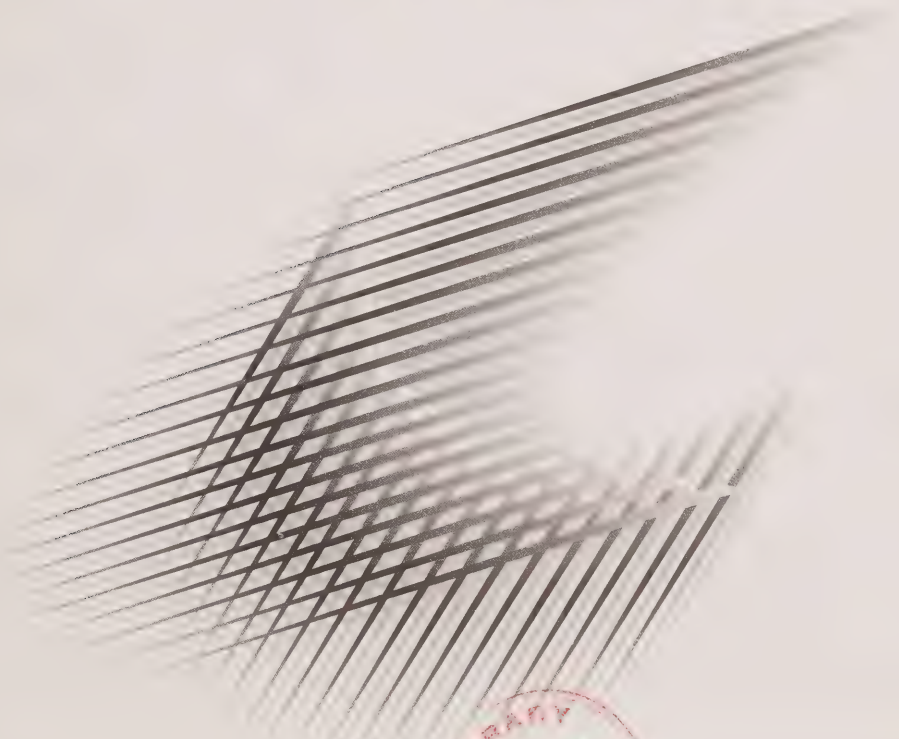






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Minister of Transport



Ministre des Transports

Ottawa, Canada K1A 0N5

3/5/03

Her Excellency the Right Honourable Adrienne Clarkson, C.C., C.M.M., C.O.M., C.D.  
Governor General of Canada  
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Ottawa, Ontario  
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Excellency:

It is with great pleasure that I submit for your attention, the seventh Annual Report on the state of transportation in Canada. This report is produced in conformity with the statutory requirements spelled out in Section 52 of the *Canada Transportation Act*.

This report, and the six previous ones, provides useful information to understand the challenges identified in **Straight Ahead**, the vision document on the future of our transportation system that I released earlier this year. **Straight Ahead** proposes for our transportation system a visionary framework to embrace to maintain prosperity and quality of life over the next decade and beyond as well as strategic directions to address key issues and specific legislative proposals in certain areas.

The report gives an overview of trends and factors influencing the evolution of transportation needs, from those emanating from socio-economic demands, to the ones resulting from changes in market conditions, allowing a good understanding of the resulting challenges for our country's transportation system. The report is a guide to understanding the demands placed on the Canadian transportation system and the pressures on its efficiency. The role and state of the transportation sector need to be assessed on an ongoing basis using the most recent information available on Canada's transportation system.

Transportation is of fundamental importance to Canada as it supports and enables social and economic activities.

Yours sincerely,

Hon. David M. Collenette, P.C., M.P.

Canada





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## TRANSPORTATION AND THE CANADIAN ECONOMY

- In 2002, the Canadian economy recovered from the slowdown of 2001, as the Gross Domestic Product (GDP) showed a 3.4 per cent real growth.
- The improved economic performance resulted from strong exports and consumer expenditures, particularly automobiles and housing.
- The U.S. demand for Canadian automobile products is one reason for the strong exports, while low interest rates were behind consumer demand for housing, which in turn boosted residential construction.
- The growth rate of the services sector (3.4 per cent) surpassed that of the goods sector (1.5 per cent).
- The value of the Canadian dollar in relation to the U.S. dollar fluctuated between US\$0.62 and US\$0.66 during 2002. Its average value over the year, however, was 2.5 per cent less than in 2001.
- The Consumer Price Index increased by 2.2 per cent in 2002, less than in 2001. While energy prices for the year were less than in 2001, users of transportation services paid 2.8 per cent more in 2002.
- In real terms, personal disposable income per capita increased by 1.5 per cent in 2002.
- While the population grew by one per cent, employment increased by 2.2 per cent (335,000 jobs).
- Alberta was the only province in 2002 to have lower economic growth than in 2001. Newfoundland and Labrador, on the other hand, experienced the strongest growth.
- The 2001 Census shows a relationship between the increasing proportion of Canadians living urban centres (10,000 people or more) and the top 27 census metropolitan areas (CMAs), as well as changes in the way Canadians commute to work.
- The population in Ontario's Golden Horseshoe, the Montreal area, British Columbia's Lower Mainland and the Calgary-Edmonton corridor grew by 7.6 per cent between 1996 and 2001. Elsewhere in Canada, the population increased by only 0.5 per cent.
- Between 1996 and 2001, the number of people within CMAs working in surrounding municipalities grew by 63 per cent, while jobs in the core areas rose by eight per cent.
- Over the last 20 years, the number of workers commuting within the core of CMAs fell by 10 per cent, while those commuting between the core and the surrounding municipalities, and between surrounding municipalities, increased. There are now more people working in CMAs than living in them.
- Canadians travelled an average of 7.2 kilometres to get to work in 2001, an increase from 1996 census results.
- More than 70 per cent of all commuters in CMAs drove a motor vehicle to work. The largest metropolitan centres reported the highest proportion of people using public transportation and the lowest proportion driving to work.
- Tourism expenditures, including expenditures on transportation, fell in 2001. Of transportation expenditures related to tourism, air transportation experienced the largest drop. Both domestic and international travel was down for all modes in 2001 and international travel fell in 2002.
- With the exception of road and marine transportation, energy demand by transportation activities decreased in 2001.
- Productivity in transportation grew by 1.9 per cent in 2001, which minimized price increases to below inflation.
- Commercial transportation services accounted for four per cent of Canada's value-added GDP. In relation to provincial/territorial GDP, the most significant importance was observed in Manitoba, British Columbia

and New Brunswick. Of the commercial transportation activity captured under the GDP, Ontario and Quebec accounted for close to 60 per cent, while Alberta and British Columbia accounted for almost 30 per cent.

- Investment in transportation represented 3.1 per cent of GDP in 2001.
- Overall transportation-related final demand accounted for almost 15 per cent of total expenditures in the economy in 2001.

## GOVERNMENT SPENDING ON TRANSPORTATION

- In fiscal year 2001/02, transportation expenditures by all levels of government totalled \$19.2 billion, \$1.2 billion more than in 2000/01. All government levels contributed to this increase.
- Government fees and tax revenues from transport users totalled \$13.8 billion, 1.3 per cent more than the previous year, of which 74 per cent came from road fuel taxes.
- In 2002/03, direct federal transport expenses are expected to be \$1.7 billion, a 15 per cent increase over 2001/02. While the federal government continued to spend less on operations, it increased its expenditures on road and bridges, and on safety, security and policy.
- In 2002/03, total direct federal subsidies, grants and contributions are expected to drop to \$784 million.
- Provincial, territorial and local governments spent \$17.2 billion on transportation in 2001/02, with roughly 79 per cent going to roads and highways.
- Also in 2001/02, governments spent \$14 billion on roads, while public spending on public transit services totalled \$2.7 billion. Federal and provincial governments spent \$1.9 billion on air, marine and rail transportation.

## TRANSPORTATION SAFETY AND SECURITY

- Canada continued to improve upon its good transportation safety record in 2002. The number of accidents in each of the modes continued a downward trend, with record lows being recorded in aviation (the lowest annual total in 25 years) and in road (the fewest casualty collisions in more than five decades). The number of marine shipping accidents also registered its lowest annual total in the past 25 years, while reported rail accidents continued a notable five-year downward trend.

- Rail-related accidents declined by 7 per cent in 2002, while fatalities decreased by 3 per cent. Crossing and trespasser accidents continued to account for the greatest proportion of fatal accidents (99 per cent) and accidents involving serious injury (82 per cent) in 2002. Direction 2006, a strategic partnership initiative involving government and industry, has as its goal to reduce the number of crossing and trespasser accidents by 50 per cent by 2006.
- One of the most notable improvements with respect to the road safety record was the reduction in the number of road-related fatalities and injuries, down from the previous year by five and three per cent, respectively. Road Safety Vision 2010, a strategic partnership initiative, has established a target of reducing the number of road-related fatalities and serious injuries by 30 per cent by 2010.
- The number of marine accidents in 2002 fell by seven per cent, with 15 fatal accidents and 25 confirmed vessel losses reported. Small fishing vessels continued to account for approximately half the reported marine accidents, while small commercial vessels accounted for a further 12 per cent. Major regulatory reform initiatives were introduced in November 2001 with the passage of the *Canada Shipping Act 2001*. Part of this reform is aimed at improving safety in these areas.
- Accidents involving Canadian-registered aircraft continued to decline in 2002, with eight per cent fewer accidents than in 2001, five fewer fatal accidents and 14 fewer fatalities. Compared with the 1997 – 2001 five-year average, the number of accidents in 2002 declined by 20 per cent. As means of further improving aviation safety levels, Transport Canada is working with the aviation industry through initiatives such as Flight 2005 and the implementation of safety management systems through all sectors of the aviation industry.
- On an annual basis, there are more than 27 million shipments involving dangerous goods. In 2002, almost all these shipments arrived without incident at their destination, with the exception of 580 occurrences. Of this number, only two were caused by the dangerous good itself. The majority of deaths and injuries are caused by the accident or collision rather than contact with the dangerous good. Transport Canada is undertaking research in the area of tanks and pressurized cylinders, and highway tank vehicle safety standards, and it is working toward greater international harmonization.
- During 2002, public confidence in the security of the transportation system was restored to pre-September 2001 levels. Working with government, industry and other stakeholders, Transport Canada introduced new security initiatives in all modes and continued to



implement security enhancements announced in 2001, following the September 11, 2001, terrorist attacks in the United States.

- In 2002, the Canadian Air Transport Security Authority (CATSA) assumed responsibility for key aviation security services, such as pre-board screening at 89 designated airports.
- Transport Canada initiated a number of aviation security enhancements in 2002.
- Transport Canada introduced initiatives to enhance marine security, including the St. Lawrence Seaway and Great Lakes Initiative, aimed at enhancing security screening procedures for ships in these waterways. Transport Canada also implemented enhancements to boarding protocols to improve response to any threats before ships arrive at port.
- Transport Canada, in participation with other government departments, implemented the Canada–U.S. Smart Border Declaration, which includes detailed bi-national workplans to protect shared critical infrastructure.
- In 2002, Transport Canada launched the Chemical Biological Radiological and Nuclear Initiative to secure access to trained industrial emergency response teams.

- Since the baseline year 1998/99, Transport Canada has reduced its GHG emissions by 18 per cent, largely as a result of divestiture.
- On November 21, 2002, the Government of Canada released Canada's Climate Change Plan to meet its Kyoto Protocol emission reduction target. The plan identified 21 megatonnes of potential emission reductions for transportation, which are to come from existing and new measures.
- For transportation, the Plan focuses initially on initiatives to: improve new vehicle fuel efficiency by 25 per cent by 2010; move toward less GHG-intensive fuels; support projects for public transit infrastructure; improve freight transport efficiency; and improve information on climate change impacts on transportation infrastructure.
- Canada ratified the Kyoto Protocol on December 17, 2002.
- The provinces and territories developed action plans to deal with the climate change challenges. These plans have taken various forms, including business plans, discussion papers, actions and initiatives, position papers and reports.
- Since 2000, the Federation of Canadian Municipalities has provided funding for sustainable municipal transportation projects through the Green Municipal Enabling Fund, a fund created by the federal government in its 2000 budget. The fund's focus is not limited to public transit technologies, as it also includes integrated and alternative transportation and transportation demand management.

## TRANSPORTATION AND THE ENVIRONMENT

- In 2000, 34 per cent of greenhouse gas (GHG) emissions in Canada came from the transportation sector: 77 per cent from road transportation, 10.3 per cent from aviation, and less than 9.5 per cent from the rail and marine modes combined.
- Over the 1980 – 2001 period, aggregate road gasoline consumption surpassed its 1980 level in 1999 only, despite a significant increase in the vehicle fleet and its use.
- Between 1980 and 2001, road diesel emissions grew by 130 per cent, a situation largely explained by the growth in trucking activities due to freer trade within North America, the shift towards a "just-in-time" environment and the deregulation of trucking activities.
- Over the same period, aviation GHG emissions grew by 26 per cent, most of which occurred in the latter half of the 1990s.
- From 1980 to 2001, rail emissions dropped by about 13 per cent, while traffic grew by more than one-third.
- Marine emissions fell by 18 per cent between 1980 and 2001, due to a contraction in marine traffic.

## RAIL TRANSPORTATION

- A total of 290 kilometres of track was discontinued in 2002, including lines in Alberta, Ontario and Saskatchewan.
- A number of transactions slated for 2002 were postponed to 2003: for example, the transfer of the Devco properties to a subsidiary of the Quebec Railway Corporation and the transfer of the assets and operations of the Canadian American, the Quebec Southern and the Bangor & Aroostook railways to the Montreal, Maine & Atlantic Railway.
- Of total rail revenues in 2001, 89.2 per cent were generated by Canadian National (CN), Canadian Pacific Railway (CPR) and VIA Rail.
- Class I railways consumed 1.77 billion litres of fuel in 2001, compared with 1.76 in 1990.
- CN reported a 1.1 per cent increase in tonne-kilometres moved in 2001 over 2000, while CPR's output stayed basically the same.



- In 2002, rail car loadings decreased by 1.9 per cent to 257 million tonnes. In Western Canada, there was a 3.4 per cent drop, while in Eastern Canada the situation remained steady.
- Shipments of grain dropped 24 per cent, coal and coke 13 per cent, iron ore 1.5 per cent and petroleum products 1.3 per cent. Meanwhile, shipments of processed forest products, fertilizer materials, metals, automotive products and chemicals increased.
- Export rail tonnage increased slightly in 2002 to reach 65.2 million tonnes, with forest products, chemicals and fertilizer materials being the largest contributors to such traffic. The largest share of rail export volume to the United States originated in Ontario.
- In 2002, there was a slight decline (3.7 per cent) in import rail tonnage. Automotive products and chemicals remained the top commodities in terms of value, while Ontario was the leader in terms of rail import volumes, accounting for 46 per cent of the total.
- Fort Frances and Sarnia, both in Ontario, accounted for 22 and 17 per cent of rail exported trade, respectively, with forest products, fertilizer materials and chemicals the major commodities exported at these border crossings. In value terms, the leading border crossing points for automotive products were Sarnia, the Windsor Tunnel and Fort Erie, accounting for 75 per cent of the total value. Sarnia was also the leading border crossing point for import tonnage, with 15 per cent of the 2002 volume.
- Class I railways moved 91 million tonnes of goods to and from Canadian ports in 2001, 5.3 per cent less than in 2000.
- British Columbia, Alberta and Saskatchewan were the main originating source of rail–marine exports in 2001. Coal traffic remained steady, while grain exports decreased. Rail–marine imports decreased slightly in 2001, but Quebec and Ontario remained the two major destinations for such traffic. A decrease in fertilizer traffic was offset by an increase in petroleum products.
- Intercity rail passenger traffic increased by 1.4 per cent in 2001. VIA Rail reported a slightly greater increase of 1.8 per cent.
- The productivity of rail freight carriers continued to increase in 2001 but at a slower rate than in previous years.
- VIA Rail's productivity declined in 2001, contravening the positive gains observed in recent years.

## ROAD TRANSPORTATION

- In 2002, reforms of regulations governing vehicle weight and dimension were pursued, agreed to or implemented in various jurisdictions.
- Nova Scotia published regulations to bring commercial van and small bus services under a safety regime along the lines of the National Safety Code.
- The Senate Standing Committee on Transport and Communications tabled a report at the end of the year on intercity bus services in Canada that recommended, among other things, a reverse onus entry test, a transitional federal subsidy program for possible service loss for low-density and rural routes and a review after five years of such entry controls.
- Heavy trucks as well as cars crossing the Canada–U.S. border decreased in 2002 as a result of the economic slowdown.
- Trimac Transportation Services topped of the list of for-hire trucking companies in Canada for total number of vehicles (tractors/trailers) in their fleet.
- Trucking firms carrying general freight accounted for 58 per cent of total revenues of large for-hire trucking firms in 2001, while the share of specialized trucking firms continued to increase.
- According to the 2001 Canadian Vehicle Survey, there are 16.8 million light vehicles (i.e. with a gross weight less than 4,500 kilograms) in scope for the survey, consisting of 10.5 million passenger cars and station wagons, 2.4 million vehicles listed as vans, 2.6 million pickup trucks and 1.3 million sport-utility vehicles (SUVs) in Canada.
- Vans, SUVs and light trucks accounted for 42 per cent of vehicle-kilometres in 2001. They were driven on average more than cars and station wagons (19,000 kilometres versus 15,500 kilometres) and had a higher vehicle occupancy ratio (1.7 persons).
- There was an average of 540 vehicles per 1,000 people in Canada in 2001.
- According to the Canadian Vehicle Survey, there were 580,000 (in scope) heavy trucks (gross weight of at least 4,500 kilograms) in Canada, of which 330,000 were medium-sized weighing between 4,500 and 15,000 kilograms. Almost 254,000 were Class 8 (heavy) trucks weighing more than 15,000 kilograms.
- Ontario (40 per cent), Alberta (25 per cent) and Quebec (11.5 per cent) accounted for 75 per cent of the heavy truck fleet.

- Heavy trucks accounted for 18.6 billion vehicle-kilometres in 2001, compared with fewer than 6.5 billion for medium-sized trucks. Empty haul movements accounted for 18 per cent of heavy truck vehicle-kilometres, compared with about eight per cent for medium-sized trucks.
- In 2001, domestic and transborder for-hire truck traffic by Canadian firms generated revenues of \$7.9 billion and \$6.9 billion, respectively, with five groups of commodities accounting for more than 75 per cent of these revenues: manufactured products, food products, forest products, metal and steel products, and automobile/transport products.
- Ontario dominated with 38 per cent of intraprovincial trucking traffic, 34 per cent of interprovincial trucking traffic and 44 per cent of total transborder traffic hauled by trucks. The heaviest traffic flows were between Ontario and the U.S. central region and Ontario and the U.S. southern region, with 17.1 billion tonne-kilometres and 10.5 billion tonne-kilometres, respectively.
- Total factor productivity in the trucking industry declined by 0.5 per cent in 2001.
- Because prices increased on average more than unit costs, the industry's average operating ratio improved in 2001.
- The revenues of urban transit operators also increased by 2.6 per cent in 2001, a situation explained by price increases (3.3 per cent).
- Transit traffic fell in 2001, reversing several consecutive years of growth. Productivity declined by 1.2 per cent.
- By year-end, 113 regional/local and remote ports and port facilities remained under Transport Canada's control.
- Total operating revenues of Canada Port Authorities (CPA), which are financially self-sufficient ports critical to domestic and international trade, reached \$278 million in 2001, up \$21 million from 2000, compared with an increase of \$7.3 million in expenditures. Vancouver and Belledune reported the largest increases in revenues. Net income of CPA ports increased by \$23.1 million in 2001.
- Tonnage handled at CPA ports dropped from 226 million tonnes in 2000 to 219.9 million tonnes in 2001, with Vancouver (33 per cent), Saint John (11 per cent), Sept-Îles (10 per cent) and Montreal (nine per cent) combined accounting for 62 per cent of total cargo handled by CPAs.
- In 2001, CPAs handled 56 per cent of total port traffic.
- At the end of 2002, of the total number of fishing harbours, 654 were managed by harbour authorities and 377 were small craft harbours managed by the Department of Fisheries and Oceans Canada.
- In 2002, only the Great Lakes Pilotage Authority generated a net loss, while the three other Pilotage Authorities posted a positive net income.
- The Canadian Coast Guard's net expenditures in 2002/03 were \$459.6 million. The Canadian Coast Guard launched a fleet management renewal initiative in 2002, as well as a review of its fleet requirement to maintain current fleet capacity.
- The two main sections of the St. Lawrence Seaway — the Montreal-Lake Ontario section and the Welland Canal section — attracted an estimated 41.1 million tonnes of traffic in the 2002 season, 1.4 per cent less than in 2001.
- Ferry services carried approximately 40 million passengers and 17 million vehicles in 2002.
- International cruise ship traffic in 2002 increased at the ports of Vancouver, Montreal and Quebec City, but decreased slightly at Halifax and Saint John.
- Domestic cargo loaded and unloaded at Canadian ports fell to 106.4 million tonnes in 2001, a 2.4 per cent drop from 2000.
- A total of 286.6 million tonnes of international cargo was handled at Canadian ports, 2.4 per cent less than in 2000. Of that total, 108 million tonnes were related to Canada's marine traffic to and from the United States, down slightly from 2000, while 179 million tonnes had to do with Canada's marine trade with overseas countries (excluding the United States).
- The value of Canadian international marine trade in 2001 was \$98.3 billion, excluding shipments via U.S. ports.

## MARINE TRANSPORTATION

- Canada signed the new International Convention on Civil Liability for Bunker Oil Pollution Damage in 2002. The Convention establishes shipowner liability and a compensation regime for spills of oil carried as fuel in a ship's bunkers.
- In 2002, the International Maritime Organization adopted amendments to the Athens Convention Relating to the Carriage of Passengers and Their Luggage by Sea. These amendments increased the limits of liability for loss of life or personal injury and require shipowners to maintain some insurance or other financial instruments to cover their liability.
- *Marine Liability Act* regulations were enacted in 2002.
- A four-member panel was appointed in May 2002 to carry out consultations as part of the review of the *Canada Marine Act*.



## AIR TRANSPORTATION

- The January 2003 report issued by the Air Travel Complaints Commissioner for the period January 2002 to June 2002, showed a slightly lower number of complaints than earlier reports for a similar period.
- A comprehensive review of the federal government rent policy for leased airports in the National Airports System was announced and is being conducted at the same time the proposed *Canada Airports Act* is developed.
- In June 2002, the adoption of Bill C-23 gave the Competition Tribunal the power to extend the duration of cease and desist orders issued by the Commissioner of Competition and was used to stop a potentially anti-competitive activity prior to a final decision on its legitimacy.
- A pilot project to test the Electronic Collection and Dissemination of Air Transportation Statistics involving six Canadian airports and five Canadian air carriers was launched in 2002. The project also involved Statistics Canada and the Canadian Transportation Agency.
- The issuance of payments totalling more than \$99 million were completed in May 2002 to Canadian air carriers and specialty air operators for losses resulting from the closure of Canada's airspace following the September 11, 2001, terrorist attacks.
- Since September 22, 2001, when international insurers withdrew their previous level of coverage, the federal government has provided short-term indemnification for third-party war and terrorism liabilities, renewing it for periods of 60 days until an international longer-term solution is developed.
- In November 2002, the Government of Quebec came to a three-year agreement with Air Canada for reduced fares for non-government users of air transportation services on 15 regional routes.
- In April 2002, the Government of Yukon adopted an air travel policy requiring equal purchases across competing airlines providing year-round services.
- The Minister of Transport announced a new multiple designation policy in May 2002, allowing all carriers to apply to operate scheduled international air services to any market, regardless of market size.
- Amendments and expanded air services opportunities were obtained in 2002 through bilateral air transport agreements with Italy, the Czech Republic, Switzerland and Hong Kong.
- Of the 1,722 certified or regulated aerodrome sites in Canada, 263 land airports offered scheduled passenger services, with an additional 847 sites available for other public and private uses.
- In 2002, at 40 airports, the Airports Capital Assistance Program funded 52 projects related to safety, asset protection and operating cost reduction.
- Despite a gradual improvement in air traffic during the second half of fiscal year 2001/02, the overall reduction in air traffic contributed to an estimated \$145 million shortfall in NAV CANADA.
- Air Canada, with its subsidiaries, remained Canada's largest airline in 2002, with \$9.8 billion in revenues and serving 66 points in Canada, 55 in the United States and 30 international destinations in 23 countries. It has three wholly owned subsidiaries: Air Canada Jazz, Zip Air and Air Canada Vacations. It offers no-frills services under the brand name Tango and premium charter service to sport teams and businesses under Jetz. Four independent local service operators offered regional services on behalf of Air Canada: Air Creebec, Air Georgian, Air Labrador and Central Mountain Air.
- Low-cost, no-frills carriers offering domestic and transborder services in 2002 included WestJet, CanJet and Jetsgo.
- The list of Canadian charter airlines providing services both domestically and internationally in 2002 included Air Transat, SkyService Airlines, HMY Airways, which was added to the list in November, and Zoom Airlines, which was added in December.
- Airlines providing year-round scheduled and charter services across Northern Canada included First Air, Canadian North and Air North. Canadian North had code-share relationships with Kenn Borek Air and North-Wright Airways.
- Twelve U.S. airlines served 17 Canadian cities, and 30 foreign airlines provided services from Canada to 39 international destinations in 28 countries.
- All-cargo airlines in service in 2002 included All-Canada Express, ICC Air Cargo, Kelowna Flightcraft, Morningstar Air Express, and a new entrant, Cargojet Canada.
- At the end of 2002, more than 2,000 airline licences were active, an indicator of the wide number of airlines operating in Canada.
- The business segment of air activity continued to grow in 2002, mainly as a result of fractional ownership.
- In 2001, the total revenues generated by the air transport industry dropped by 8.4 per cent, the first drop since 1993. The 3.9 per cent average reduction in service prices was not enough to stimulate overall demand, which decreased by 3.6 per cent.

- Productivity gains of 5.3 per cent were offset by large factor price increases, most notably labour, leading to a 1.5 per cent increase in unit costs in 2001. The year 2001 was a difficult year. Air Canada reported \$1.3 billion in losses, Canada 3000 ceased operations and Air Transat had to restructure its operations. Difficulties were also encountered in 2002, with Air Canada reporting losses of \$428 million.
- Canada's air trade with countries other than the United States declined in 2002, from \$39.9 billion to \$38.7 billion.
- Air passenger traffic fell from a peak of 60 million passengers in 2000 to an estimated 55 million passengers in 2002. Transborder was the most severely affected market, with a 13 per cent decrease between 2000 and 2002.





*From the most current information available, the state of transportation in Canada is presented in the 2002 Annual Report.*

The *Canada Transportation Act* (1996) has placed a statutory responsibility on the Minister of Transport to table every year an annual report on the state of transportation in Canada. The mandate delimiting the responsibility is defined in Section 52 of the Act:

"Each year the Minister of Transport shall, before the end of May, lay before Parliament a report briefly reviewing the state of transportation in Canada in respect of the preceding year, including:

- (a) the financial viability of each mode of transportation and its contribution to the Canadian economy and the development of the regions;
- (b) the extent to which carriers and modes of transportation were provided resources, facilities and services at public expenses;
- (c) the extent to which carriers and modes of transportation received compensation, indirectly or directly, for the resources, facilities and services that were required to be provided as an imposed public duty; and
- (d) any other transportation matters the Minister considers appropriate."

This 2002 annual report is the seventh submitted by the Minister since the coming into force of the *Canada Transportation Act*. This report presents an overview of transportation in Canada, limited only by the availability of relevant data but nevertheless using the most current data and information available. When 2002 data was available, the review for that year is reported; otherwise, this report reflects the most recent year for which data was available. The scope is not limited to federal transportation responsibilities, providing by the same token a unique comprehensiveness despite its limited coverage of urban and intermodal transportation matters.

In recent years, an addendum to the report was posted on Transport Canada's Web site to provide more detailed information on subject matters covered in the overview of transportation in Canada. Last year, for instance, an addendum covering government spending on transportation and transportation employment was accessible on the Internet. This year, a serious attempt was made to produce a more succinct review of the state of transportation in Canada. Maintaining the same coverage as in previous years' reports was achieved by making a more extensive use of an addendum. Readers interested in more detailed and/or time series information should consult the Addendum at [www.tc.gc.ca](http://www.tc.gc.ca). Individual references to the Addendum are found either in the text per se or in footnotes to the text or to tables and figures. Information contained in tables or used to produce figures in last year's report are either updated in the report per se or found in tables in the Addendum. In addition, all previous years' annual reports are easily accessible on Transport Canada's Web site at [www.tc.gc.ca](http://www.tc.gc.ca).

Transportation is omnipresent in Canadians' lives. Transportation opens markets to natural resources, agricultural products and manufactured goods, it supports service industries, and it alleviates the challenges delimited by topography. Transportation also links communities and reduces the effects of distances separating people from each other. As simple as these implied and oversimplified roles of transportation are, the intertwined and interdependent relationships between transportation and the economic and social fabrics of our society are complex — this is because these roles are diverse and comprise many separate evolving circumstances and conditions delimiting needs.

The fluctuations in economic activities occurring either at the regional or at the sectoral level have a definite impact on the state of transportation. This is because the demand for transportation services is derived from the needs emanating from all sectors of the economy. This in turn explains why this year's report again begins by reviewing at a macro level the performance of the Canadian economy (Chapter 2). The information behind the employment, trade and tourism chapters in last year's report has been placed in the Addendum. Detailed information on transportation energy consumption is also accessible in the Addendum.

Chapter 3 presents the most recent information on government transportation spending and revenues. This chapter addresses the Section 52 (b) requirement related to the statutory mandate for the annual report. Some of the government transportation spending is directed at specific transportation system infrastructure assets. Although the private sector also makes expenditures on and investments in Canada's transportation system, these are not covered in this chapter. The reader must keep in mind that the public sector does not plan nor fully control all such expenditures and investments.

Chapter 4 reviews safety and security in the transportation system. Safe transportation operations remain a fundamental priority of the Canadian transportation system. This chapter reviews the most recent accidents and incidents statistics by mode to provide an up-to-date overview. The events of September 11, 2001, have led to more emphasis being placed on enhancing the security of the transportation system, and this chapter presents an overview of initiatives launched to achieve this goal.

Chapter 5, a review of transportation and the environment, devotes special attention to climate change. With Canada's commitment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change, an overview of the initial elements of Canada's proposed response to climate change is presented. This chapter also reviews the other environmental challenges associated with transportation activities.

Chapters 6 to 9 give the most recent information on transportation, but this information is structured differently than it was in recent years' reports. The fundamental difference is a modal presentation of the information. For rail (Chapter 6), marine (Chapter 8) and air transportation (Chapter 9), the coverage is structured as special events in 2002, infrastructure, industry structure, freight and passenger transportation activity levels, and, where applicable, intermodalism and performance. All road-related transportation has been regrouped in Chapter 7, with coverage of the same subject matters as found in the three modal chapters.

Most of the data used and presented in this report or in the Addendum came from sources external to Transport Canada. The onus for data validation rests with the external sources. Proper care and attention to data quality and limitations was devoted during the production of this report, and footnotes are used where needed to flag issues. Within the constraints of the statutory deadlines under which the report was produced, serious attempts to address data-related issues were made. When data accuracy was confirmed by the source(s) used, the challenge to data quality was stopped. This report does not attempt to circumvent data limitations by estimating, nor does it attempt to present a prospective view of Canada's transportation system.

# TRANSPORTATION AND THE ECONOMY

# 2

*After a slowdown in 2001, the Canadian economy returned to real growth mode in 2002.*

## CANADIAN ECONOMIC PERFORMANCE

In 2002, the Canadian economy surprised many people by recovering from the 2001 slowdown and posting real growth in gross domestic product (GDP) at market prices of 3.4 per cent. Economic growth was very strong in the first quarter of the year, as real GDP grew at six per cent (at annual rates), but slowed over the year to grow at only 1.6 per cent in the final quarter. The annual growth rate was one per cent higher than real GDP growth in the United States. Economic growth in Canada was driven by strong exports and consumer expenditures, especially for housing and automobiles, while business investment remained weak. Industrial capacity utilization rose to 83.3 per cent in the third quarter of 2002, up from the low of 80.0 per cent in the last quarter of 2001.

Consumer spending on motor vehicles rose 7.1 per cent in 2002. Sales of new motor vehicles reached a new record of 1,733,318 vehicles, as purchasers responded to incentives and low interest rates. Other consumer expenditures were not as strong, as overall consumer expenditures rose 2.9 per cent. U.S. demand for Canadian automobile products was a major reason behind strong exports, particularly in the third quarter. For the year as a whole, total exports rose 0.8 per cent in real terms. Investment in residential structures rose 16 per cent, as consumers took advantage of low interest rates. For the first time since 1989, the number of new dwelling units built exceeded 200,000. Business investment in non-residential structures fell 3.9 per cent, while investment in machinery and equipment fell 2.4 per cent. Government spending on goods and services rose two per cent, while government capital spending increased 8.7 per cent.

Table 2-1 examines general economic indicators in Canada for 2002.

TABLE 2-1: GENERAL ECONOMIC INDICATORS, 2002

		Percentage change	Annual percentage change
	2002	2001 - 2002	1996 - 2001
<b>GDP at Basic Prices</b>			
(Millions of constant 1997 dollars)			
Total Economy	977,620	3.1	3.9
Goods	301,307	1.5	3.2
Agriculture	12,303	(7.2)	0.6
Forestry	5,660	(1.3)	1.7
Mining	36,488	(1.5)	2.4
Manufacturing	164,749	2.4	3.8
Construction	52,073	3.4	4.3
Services	676,313	3.8	4.2
Retail trade	55,527	6.0	3.8
Transportation and warehousing	44,516	0.0	2.8
<b>Merchandise Trade</b>			
(Millions of dollars)			
Exports	410,330	(1.0)	8.2
Imports	356,109	1.6	8.1
<b>Income (Dollars)</b>			
Personal Disposable Income per capita	22,151	3.5	3.8
<b>Canadian Dollar</b>			
(US cents per unit)	63.7	(1.4)	(2.5)
<b>Employment (Thousands)</b>	15,412	2.2	2.3
<b>Population (Thousands)</b>	31,414	1.0	1.0
<b>Prices</b>			
Total Economy (1997 = 100)	107.5	1.1	1.5
Consumer Price Index (1992 = 100)			
All Items	119.0	2.2	1.9
Transportation	134.4	2.8	2.1

Source: Statistics Canada Cat. 11-010, 13-001, 15-001, 62-010; Bank of Canada

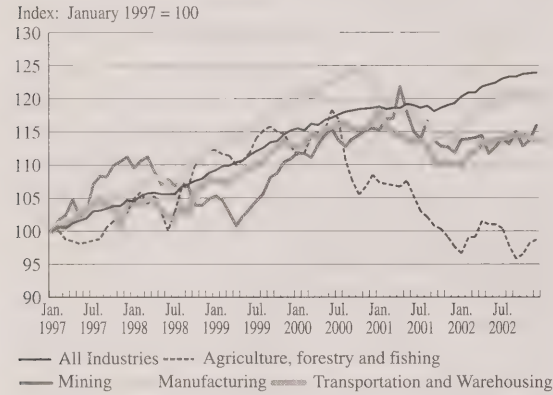
In terms of industry GDP, the goods producing sector in 2002 grew 1.5 per cent in real terms, while the service sector grew 3.8 per cent. This growth was derived mainly from the automobile sector, which grew 5.3 per cent, and the housing sector. The building of new houses was behind the 3.4 per cent increase in the construction industry. Manufacturers of wood products, paint, appliances and furniture that support new home construction were



also strong. Manufacturing as a whole grew 2.4 per cent in 2002. The primary industries had weak performances, as mining and forestry fell 1.5 and 1.3 per cent, respectively, while agriculture dropped 7.2 per cent. Transportation and warehousing GDP did not show any growth over 2001.

Figure 2-1 charts the changes in real GDP since 1997.

**FIGURE 2-1: REAL GDP BY MAJOR SECTOR, 1997 – 2002**

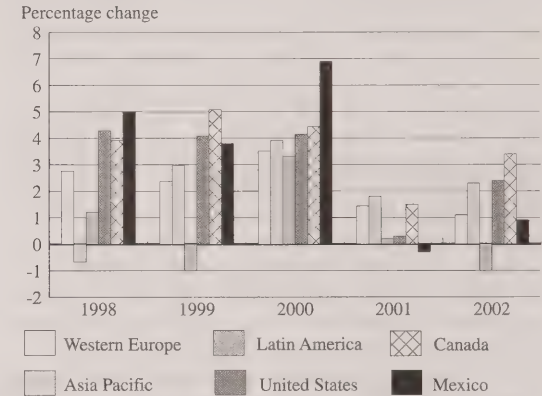


Source: Statistics Canada, Cat. 15-001

Figure 2-2 shows that the world economy generally did better in 2002 than in 2001. Real GDP growth in the United States was 2.4 per cent in 2002, two per cent greater than in 2001 but one per cent less than in Canada. As in Canada, U.S. consumers provided support for the economy, particularly in the purchases of houses and automobiles. Mexico had weak growth of 0.9 per cent, reflecting slow export sales, particularly to the United States. Latin America showed negative growth in 2002, as the region was affected by difficulties in Argentina, Venezuela and, to a lesser extent, Brazil. Western Europe had real economic growth of only 1.1 per cent, down about 0.5 per cent from 2001. The Euro-zone suffered because monetary policy was not eased, while the United Kingdom had somewhat better growth than the other large economies. The Asia-Pacific region grew 2.3 per cent, up 0.5 per cent from 2001. This growth was achieved despite the slightly negative growth of Japan, the world's second largest economy.

Canadian exports fell in 2002 by one per cent, while imports rose by 1.6 per cent. This reduced Canada's trade surplus by \$9.8 billion. Exports to all Canada's major trading partners decreased, with the largest drop being to the European Union. Imports increased from all regions other than the United States.

**FIGURE 2-2: REAL GDP OF CANADA AND OTHER REGIONS, 1998 – 2002**



Note: GDP at market prices.

Source: Global Insight

The Canadian dollar rose in the first six months of 2002 from US\$0.62 to US\$0.66 at the end of June before falling back to below US\$0.63 in October and then strengthening slightly to finish the year at US\$0.663. Overall, the average value of the Canadian dollar fell 2.5 per cent from 2001. Prices in the total economy, as measured by the GDP deflator, rose 1.1 per cent, almost unchanged from the one per cent increase in 2001. The average all-items Consumer Price Index (CPI) rose 2.2 per cent in 2002, compared with the 2.6 per cent increase in 2001. Consumers paid an average two per cent less for energy in 2002, after 3.3 and 16.2 per cent average increases in 2001 and 2000, respectively. Consumers paid 2.8 per cent more for transportation, reflecting a 13.2 per cent increase in insurance premiums and an eight per cent increase in air travel costs.

Real disposable income per capita rose 1.5 per cent in 2002, unchanged from the increase in 2001 but below the 2.7 per cent increase of the previous three years.

In 2002, for the second year in a row, Canada's mid-year population rose by one per cent, to reach 31.4 million.

## PROVINCIAL ECONOMIC PERFORMANCE

In 2002, all provinces except Alberta experienced higher growth than in 2001. With strong oil production and two significant construction projects, the Newfoundland and Labrador economy had the highest economic growth among the provinces. Nova Scotia and New Brunswick benefited from energy development, while Prince Edward Island benefited from agricultural and manufacturing activity. In Ontario and Quebec, continued strong consumer spending along with growth in exports meant a recovering manufacturing sector. In both provinces, housing construction boomed. Manitoba's well-diversified economy enjoyed strong growth, while dismal agriculture production meant weak economic growth for Saskatchewan. Moderate activity in the oil production industry and a slow agriculture sector were the causes of relatively weak economic growth in Alberta. British Columbia was much improved in 2002 but the province suffered from a weak forestry sector affected by the softwood tariff.

Table 2-2 shows economic growth in the provinces for 2001/02.

**TABLE 2-2: PROVINCIAL ECONOMIC GROWTH, 2001/02**

(GDP at basic prices in 1997 dollars)

	Percentage Change 2000/01 <sup>1</sup>	Percentage Change 1996/97
Newfoundland and Labrador	8.4	4.3
Prince Edward Island	4.7	2.3
Nova Scotia	3.0	3.3
New Brunswick	3.1	2.7
Quebec	3.4	3.6
Ontario	3.5	4.5
Manitoba	2.5	3.0
Saskatchewan	-1.1	2.3
Alberta	0.3	4.6
British Columbia	2.5	2.5

1 Forecast.

Source: Statistics Canada, Conference Board of Canada

## URBANIZATION AND TRAVEL TO WORK<sup>1</sup>

As urbanization continues to increase in Canada, more and more commuters in urban areas are changing the way they get to work.

The 2001 Census shows that 79.4 per cent of Canadians lived in urban centres with a population of 10,000 people or more, an increase from 78.5 per cent in 1996. The number of people living in Canada's 27 census metropolitan areas (CMAs) rose to 19.3 million, or 64 per cent of the total population, up from 63 per cent in 1996. Growth was concentrated in the four major urban areas of Ontario's Golden Horseshoe, the Montreal area, British Columbia's Lower Mainland and the Calgary-Edmonton corridor. The number of people living in these areas rose 7.6 per cent from 1996 to 2001, compared with a 0.5 per cent increase in the rest of Canada, and made up 51 per cent of the total population. Within CMAs, growth from 1996 to 2001 has been faster in the surrounding municipalities (8.5 per cent) than in the core municipalities (4.3 per cent).

As Table 2-3 shows, the number of people whose usual place of work was located in CMAs was 7.9 million, up 460,000 from 1996 and 1.5 million from 1981. Within CMAs, the number of people who worked in the surrounding municipalities grew by 63 per cent from 1996 to 2001, while the number who worked in the core areas grew only 8.3 per cent. The total number of jobs in the surrounding municipalities rose from 29 to 38 per cent, while the number in the core municipalities fell from 71 to 62 per cent. This shift was most pronounced in Toronto and Vancouver, both of which had a 17 per cent shift.

Figure 2-3 shows the changing commuting patterns within CMAs. From 1981 to 2001, the number of workers who commuted within the core fell 10 per cent, while commutes within a suburban municipality, between a core and the surrounding municipalities, and between surrounding municipalities all rose. The Census data also showed 245,000 more people working in CMAs than living in those areas. For Toronto, seven per cent of its workforce (162,000) lives outside its CMA boundary.

1 Data in this section is taken from Statistics Canada Census 2001 publication *Where Canadians work and how they get there*. Catalogue 96F0030XIE2002u10

TABLE 2-3: WORKERS IN THE CORE AND SUBURBS, TOP FIVE CENSUS METROPOLITAN AREAS, 2001

	<i>In CMA</i>	<i>In core</i>	<i>In suburbs</i>	<i>Percentage change from 1981</i>		
				<i>In CMA</i>	<i>In core</i>	<i>In suburbs</i>
Toronto	2,006,150	1,178,605	827,550	29.4	0.2	121.1
Montreal	1,437,645	626,800	810,850	16.2	1.4	30.9
Vancouver	790,850	284,420	506,430	51.4	3.0	105.8
Ottawa-Hull	480,500	337,885	87,610	40.5	20.8	40.3
Calgary	428,335	414,235	14,100	35.8	33.9	138.8
All CMAs	7,929,555	4,886,205	2,988,359	24.0	7.1	63.3

Source: Statistics Canada Census 2001

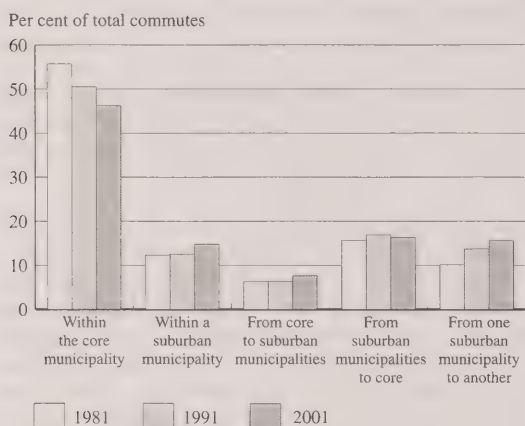
TABLE 2-4: WORKERS' USUAL MODE OF TRANSPORTATION TO WORK IN THE TOP FIVE CENSUS METROPOLITAN AREAS, 2001

	<i>All modes transportation</i>	<i>Driver</i>	<i>Passenger</i>	<i>Public</i>	<i>Walk</i>	<i>Bicycle</i>	<i>Other</i>
	<i>Number of workers</i>	<i>Per cent</i>					
Toronto	2,248,055	65.2	6.3	22.4	4.6	0.9	0.6
Montreal	1,580,270	65.6	4.8	21.7	5.9	1.4	0.6
Vancouver <sup>1</sup>	905,995	72.2	7.0	11.5	6.5	1.1	1.7
Ottawa-Hull	525,070	64.6	7.4	18.5	6.8	1.1	1.6
Calgary	499,050	71.8	6.8	13.2	5.9	1.6	0.7
All CMAs	9,119,770	70.8	6.6	14.8	5.7	1.3	0.8
Canada	13,450,855	73.8	6.9	10.5	6.6	1.2	1.0

<sup>1</sup> A bus strike in 2001 may explain the low public transit usage in Vancouver.

Source: Statistics Canada Census 2001

FIGURE 2-3: TYPE OF COMMUTE TO WORK IN ALL CENSUS METROPOLITAN AREAS, 1981, 1991 AND 2001



Source: Statistics Canada Census 2001

The distance that Canadians travel to work increased to 7.2 kilometres in 2001, up from seven kilometres in 1996. The proportion of people who travel more than 25 kilometres was 13 per cent, about the same as in 1996. CMAs with the three greatest median commuting distances were in the Golden Horseshoe: Oshawa (10.7 kilometres), Toronto (9.2 kilometres) and Hamilton (8.2 kilometres). The two CMAs with the next greatest median commuting distances were Montreal (7.9 kilometres) and Ottawa-Hull (7.8 kilometres).

As Table 2-4 shows, the automobile continues to be Canadians' most common form of transportation to work. In 2001, 13.5 million Canadians commuted to work, up 10.6 per cent from 1996. Of these commuters, 9.2 million went to work in CMAs, a 14 per cent increase from 1996. In 2001, 70.8 per cent of all commuters in CMAs drove a motor vehicle to work, 6.6 per cent went to work as passengers, 14.8 used public transportation, 5.7 per cent walked and 1.3 rode a bike. These percentages are generally unchanged from 1996, although the number of drivers increased by just 0.5 per cent at the expense of the number of passengers. The largest metropolitan centres had the highest proportion of people using public transportation and the lowest proportion of people driving to work. In Toronto, the number of people using public transportation fell by about 0.5 a per cent since 1996, while in Montreal it rose by about 1.5 per cent.



## INTERNATIONAL TRADE<sup>2</sup> AND TRADE FLOWS

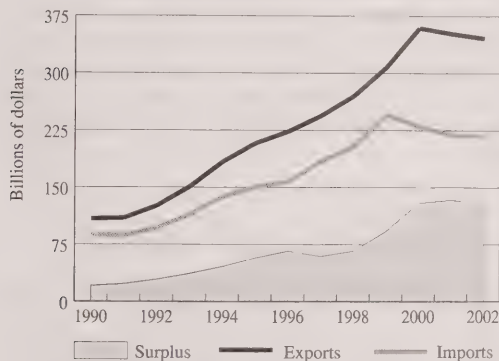
At the end of 2002, Canada's trade surplus with the rest of the world fell to its lowest level since 1999, as exports of merchandise fell and imports rose.

### TRADE WITH THE UNITED STATES

In 2002, the United States was by far Canada's most important trading partner, capturing 76 per cent (in value) of Canada's total trade with the world (70 per cent in 1991). Canada's exports to the United States represented more than 87 per cent of Canada's total exports to the world (75 per cent in 1991). By contrast, Canada's imports from the United States oscillated between 63 and 68 per cent of total imports from the world during the period 1990 – 2002. As a result, Canada's annual surplus with the United States has enjoyed an annual average growth of 17 per cent since 1991.

Figure 2-4 tracks the value of trade with the United States from 1990 to 2002.

**FIGURE 2-4: VALUE OF GOODS TRADED BETWEEN CANADA AND THE UNITED STATES, 1990 – 2002**



Note: Customs-based trade data; Preliminary data for 2002.

Source: Transport Canada, adapted from Statistics Canada, International Trade database

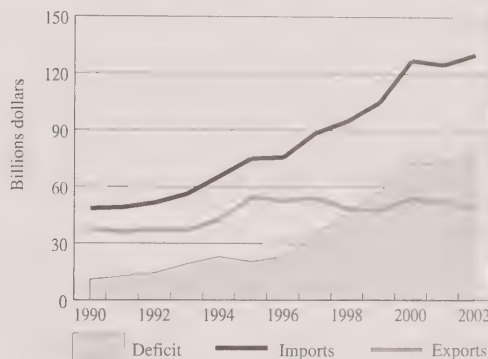
In 2002, Canada's trade with the United States totalled \$564 billion. Trucks carried almost 66 per cent of this trade (\$1.5 billion on a daily basis), followed by rail (17 per cent), pipeline, air and marine. Trucking was the dominant mode for exports (57 per cent) and for imports (80 per cent). By volume, pipelines ranked first, at 32 per cent (mainly in exports), followed by trucks (29 per cent) and marine (20 per cent).

The most important trade flow between Canada and the United States involved Ontario and the U.S. Central East Region (bordering the Great Lakes area), totalling \$168 billion. Four of the top six Canada–U.S. trade flows involved Ontario. Nearly 80 per cent of the Canada–U.S. trade carried by trucks (value) was concentrated at six border crossing points: Windsor/Ambassador bridge, Fort Erie/Niagara Falls, Sarnia and Lansdowne in Ontario, Lacolle in Quebec and Pacific Highway in British Columbia.

### TRADE WITH OTHER COUNTRIES

Canada's trade with other countries totalled \$180 billion in 2002. This trade registered a deficit in 2002, as imports from other countries generally exceeded Canada's exports to these countries. As Figure 2-5 shows, trade deficits have grown at an annual average rate of 18 per cent since 1991.

**FIGURE 2-5: VALUE OF GOODS TRADED BETWEEN CANADA AND COUNTRIES OTHER THAN THE UNITED STATES, 1990 – 2002**



Note: Customs-based trade data; Preliminary data for 2002.

Source: Transport Canada, adapted from Statistics Canada, International Trade database

In terms of value as of volume, marine and air were the dominant modes, capturing more than 90 per cent of the trade with the overseas countries. In 2002, six trade flows accounted for nearly 75 per cent of Canada's total trade with countries other than the United States. Four of these were two-way flows between eastern provinces and Europe (\$14 billion in exports, \$41 billion in imports) and between western provinces and the Pacific Rim countries (\$13 billion in exports, \$18 billion in imports). The other two-way flows were import-oriented, moving to eastern provinces from the Pacific Rim countries (\$33 billion) and Mexico (\$11 billion).

<sup>2</sup> Customs-based trade statistics are used in the present report, as detailed information on commodity, modes of transport and geographic region is presented on a Customs basis only.



For more detailed information on Canada's trade with the United States and other countries, see tables A2-1 to A2-9 in the Addendum.

## TOURISM

In 2001, tourism expenditures in Canada were \$51.7 billion, down 0.2 per cent from 2000. Tourism expenditures on transportation were down 4.3 per cent to \$19.7 billion, due to an 8.1 per cent drop in expenditures on air travel. This decline continued in the first nine months of 2002, as total tourism expenditures were \$38.1 billion, 3.2 per cent less than in the first nine months of 2001.

Domestic travel<sup>3</sup> fell in 2001, as 144.2 million trips were taken in Canada, down 11 per cent from the 162.2 million trips taken in 2000. All types of domestic travel, interprovincial and intraprovincial as well as both same day and overnight, fell. Domestic travel by all modes also fell, except for a 28 per cent increase in same-day travel by rail.

As Table 2-5 shows, international travel, both to and from Canada, dropped in 2002 by 6.9 per cent. Trips by Canadians to the United States fell 9.9 per cent, although overnight trips rose 1.3 per cent. Trips by non-residents to Canada fell six per cent, although overnight trips by Americans rose 7.3 per cent. (For more details on tourist travel, see tables A2-10 to A2-20 in the Addendum.)

**TABLE 2-5: INTERNATIONAL TRAVEL, 2002**

	2002	Percentage change from 2001
Trips by Canadians	39,239,189	(9.2)
To United States	34,558,922	(9.9)
Automobile	28,544,214	(9.8)
Same day	20,853,331	(13.3)
Overnight	7,690,883	1.3
To all other countries	4,680,267	(3.1)
Trips by non-residents	44,896,260	(4.8)
by U.S. residents	40,878,172	(4.6)
Automobile	33,423,832	(5.1)
Same day	22,816,650	(9.9)
Overnight	10,607,182	7.3
Trips by all other non-residents	4,018,088	(6.0)
Total international trips	84,135,449	(6.9)

Source: Statistics Canada, Cat. 66-001

## EMPLOYMENT

In 2002, total employment in Canada rose by 2.2 per cent with the creation of 335,000 jobs. Over the last five years, the number of full-time jobs related to transportation totalled more than 800,000. Preliminary figures for 2002 do not allow us to assess whether total employment in the transport sector followed the national trend. The air transport industry was severely affected by the economic slowdown and the terrorist attacks, and showed no signs of recovery in 2002; air transport-related employment decreased by 7.2 per cent. No conclusion could be drawn from the available data for the other transportation sectors.

For detailed times series on employment and salaries, see tables A2-21 to A2-47 in the Addendum.

## ENERGY CONSUMPTION

Total energy consumption in the Canadian economy decreased by 0.4 per cent between 2000 and 2001. Energy demand by the transportation sector, which accounts for 34 per cent of this total, decreased by one per cent. The only growth in energy use occurred in road transportation (0.4 per cent) and the marine sector, including fisheries (7.9 per cent). At the other end of the spectrum, fuel consumption decreased by 9.2 per cent in the aviation sector and by 8.6 per cent in the pipeline industry. For detailed information on energy usage in the transportation sector, see tables A2-48 to A2-60 in the Addendum.

## PRODUCTIVITY AND PRICE PERFORMANCE OF TRANSPORT

After a period of robust annual productivity growth in the first half of the 1990s, productivity increases in selected transport industries (rail, air and trucking) slowed during the second half of the decade to 1.6 per cent per year. Productivity growth in 2001 was higher at 1.9 per cent.

Transport prices were affected by these trends. In both periods, transport prices fell in real terms. However, the reduction was far more pronounced in the first half of the 1990s when they fell by 2.3 per cent annually. The price patterns were especially altered in 2000 as a result of the spike in fuel oil prices. In 2001, transport prices returned to increases below the inflation rate.

3 Domestic travel refers to trips at least 80 kilometres from a traveller's usual place of residence, excluding trips to or from work or school.

Lower transport prices and a strong trade sector in the first half of the 1990s led to transport activity doubling the growth of the economy over this period. From 1996 to 2001, the growth of transport output slowed down but remained above that of the economy. For more information on the productivity and price performance of the transport sector, see tables A2-61 to A2-64 in the Addendum.

## IMPORTANCE OF TRANSPORTATION TO THE CANADIAN ECONOMY

### VALUE-ADDED OUTPUT OF COMMERCIAL TRANSPORTATION

Value-added estimates<sup>4</sup> of output are available for transportation services that are offered on a commercial or for-hire basis. Such estimates do not include transportation services that are operated by a company for its own use, such as private trucking.

Commercial transportation industries in Canada accounted for \$39 billion in 2002, or four per cent of the value-added GDP. Trucking is the most important industry, accounting for \$11.9 billion, or 1.2 per cent of the total output. The air and rail transportation industries accounted for \$4.3 billion (0.4 per cent of total output) and \$4.7 billion (0.5 per cent), respectively.

Table 2-6 compares the contribution of the different modes of transportation to Canada's GDP in 2002.

### TRANSPORTATION-RELATED DEMAND

The total of all transportation expenditures for the final demand of goods accounted for 14.1 per cent of expenditures in Canada's economy in 2002. Personal expenditures on transportation represented the largest part of transportation-related demand, accounting for 8.8 per cent of GDP. In 2002, these expenditures grew by 5.2 per cent, reflecting a 7.5 per cent increase in the purchases of motor vehicles. Transportation equipment purchases, mostly motor vehicles, made up 4.2 per cent of the GDP, while other motor vehicle expenses, including maintenance and repair, fuel and licences, made up

**TABLE 2-6: COMMERCIAL TRANSPORTATION AS A PROPORTION OF GDP, 2002**

	<i>Millions of constant 1997 dollars<sup>1</sup></i>	<i>Per cent of GDP</i>
Industries		
Air	4,310.3	0.4
Rail	4,696.5	0.5
Water	1,120.2	0.1
Truck	11,948.5	1.2
Urban transit systems	2,900.4	0.3
Interurban and rural bus	179.1	0.0
Miscellaneous ground passenger transportation	1,926.7	0.2
Other transportation <sup>2</sup>	11,914.7	1.2
Transportation Industries	38,853.0	4.0

1 GDP at basic prices.

2 Includes scenic and sightseeing, postal and courier services, as well as support activities for other modes of transportation such baggage handling, pilotage, harbour operation and rail car loading and unloading.

Source: Statistics Canada Cansim Table 379-0019

another 3.6 per cent. Personal expenditures on commercial transportation made up 1.1 per cent of total GDP. For a more detailed breakdown of personal expenditures for transportation, see Table A2-65 in the Addendum.

Investment in transportation made up 3.3 per cent of the GDP in 2002. Business investment in transportation equipment made up the largest part of this and accounted for 2.3 per cent of the GDP. In 2002, business transportation investment rose by 29.2 per cent, reflecting a swing in automotive inventories from a drop of \$3 billion in 2001 to an increase of \$2.6 billion. Expenditures on roads made up 87 per cent of government spending on transportation and accounted for 0.6 per cent of the GDP. For more detailed information on government transportation spending, see Chapter 3 of this report.

Automotive trade dominated transportation exports and imports. Exports of automotive equipment, including parts, accounted for 8.5 per cent of the GDP, while imports accounted for 7.1 per cent in 2002. Automotive exports rose 4.5 per cent in 2002, while automotive imports rose 12.3 per cent. Exports and imports of transportation services each accounted for about one per cent of the GDP.

Transportation-related domestic demand made up 13.6 per cent of final domestic demand in 2002. This percentage is lower than for the GDP, reflecting the importance of automotive products to Canada's external trade.

Table 2-7 breaks down transportation demand as a proportion of GDP.

4 A value-added measure of output is referred to as net output. It is equivalent to gross output or total sales net of goods and services purchased by a firm as intermediate inputs and includes only primary inputs such as labour.

TABLE 2-7: TRANSPORTATION DEMAND AS A PROPORTION OF GDP, 2002

	Millions of dollars 2002	Per cent of GDP 2002	Per cent Annual Growth 2001 – 2002	Per cent Annual Growth 1996 – 2001
<b>Personal Expenditures on Transportation</b>	<b>100,763</b>	<b>8.8</b>	<b>5.2</b>	<b>6.3</b>
New and Used				
Transportation Equipment	47,723	4.2	7.5	8.0
Repair and Maintenance Expenditures	13,137	1.2	6.1	4.3
Transportation Fuels and Lubricants	20,494	1.8	3.1	5.9
Other Motor Vehicle-Related Equipment	6,713	0.6	2.9	4.1
Purchased Commercial Transportation	12,696	1.1	0.4	4.8
<b>Investment in Transportation</b>	<b>37,898</b>	<b>3.3</b>	<b>24.5</b>	<b>N/A</b>
Business Investment in Transportation	29,847	2.6	29.2	N/A
Transportation Infrastructure (roads and railways)	1,252	0.1	5.6	0.3
Transportation Equipment	25,964	2.3	3.2	16.4
Inventories	2,631	0.2	(181.0)	N/A
Government Investment in Transportation	8,051	0.7	9.9	2.9
Transportation Infrastructure (roads)	6,998	0.6	6.8	2.6
Transportation Equipment	1,053	0.1	35.5	5.9
<b>Government Spending on Transportation<sup>1</sup></b>	<b>12,333</b>	<b>1.1</b>	<b>(8.3)</b>	<b>(2.0)</b>
Road Maintenance	7,614	0.7	5.6	5.3
Urban Transit Subsidies	2,354	0.2	(3.9)	2.8
Other Spending	2,365	0.2	(23.8)	(5.9)
<b>Exports</b>	<b>108,041</b>	<b>9.5</b>	<b>4.5</b>	<b>7.7</b>
Automotive Products	97,081	8.5	4.5	7.9
Commercial Transportation	10,960	1.0	4.2	5.9
<b>Imports</b>	<b>95,777</b>	<b>8.4</b>	<b>10.4</b>	<b>7.1</b>
Automotive Products	81,446	7.1	12.3	7.3
Commercial Transportation	14,331	1.3	0.9	6.1
<b>Total Transport-Related Final Demand</b>	<b>161,185</b>	<b>14.1</b>	<b>5.0</b>	<b>N/A</b>
<b>Gross Domestic Product at Market Prices</b>	<b>1,142,123</b>	<b>100.0</b>	<b>4.6</b>	<b>5.5</b>
Transportation-Related Domestic Demand	148,133	13.6	4.4	N/A
<b>Final Domestic Demand</b>	<b>1,092,106</b>	<b>100.0</b>	<b>4.8</b>	<b>5.4</b>

1 2001 figures; growth rates over previous year are growth rates over 2000.

Source: Statistics Canada National Income and Expenditure Accounts, Transport Canada

## IMPORTANCE OF COMMERCIAL TRANSPORTATION TO PROVINCIAL/ TERRITORIAL ECONOMIES

### COMMERCIAL TRANSPORTATION

Table 2-8 shows the importance of commercial transportation to provincial and territorial GDP. For the Canadian economy as a whole, commercial transportation accounted for four per cent of value-added GDP. It was most important to Manitoba, British Columbia and New Brunswick. Most of the commercial transportation activity took place in Ontario and Quebec, which together account for almost 59 per cent of the total commercial transportation measured in the GDP. Alberta and British Columbia accounted for almost 30 per cent.

TABLE 2-8: COMMERCIAL TRANSPORTATION AS A PROPORTION OF GDP BY PROVINCE AND TERRITORY, 2001

	Millions of constant 1997 dollars	Per cent of Total Canadian Commercial Transportation	Per cent of Total Provincial/ Territorial GDP
Newfoundland and Labrador <sup>1</sup>	464.7	1.0	4.1
Prince Edward Island <sup>1</sup>	73.0	0.2	2.6
Nova Scotia <sup>1,2</sup>	919.0	2.1	4.4
New Brunswick <sup>1,2</sup>	957.0	2.1	5.4
Quebec	9,155.5	20.6	4.4
Ontario	15,700.3	35.3	3.6
Manitoba <sup>1</sup>	2,057.1	4.6	6.1
Saskatchewan	1,694.8	3.8	3.4
Alberta	6,550.0	14.7	4.1
British Columbia	6,753.6	15.2	5.1
Territories <sup>1</sup>	206.5	0.5	4.4
<b>Canada</b>	<b>44,531.5</b>	<b>100.0</b>	<b>4.0</b>

Note: GDP at basic prices.

1 Includes warehousing.

2 Includes pipeline.

Source: Statistics Canada Cansim Table 379-0025

## PROVINCIAL AND TERRITORIAL PERSONAL TRANSPORTATION SPENDING

In 2001, Canadians spent \$95.8 billion on personal transportation. Of this total, Ontario residents spent 41 per cent, Quebec residents 23 per cent, British Columbia residents 13 per cent, and Alberta residents 10 per cent.

On a per capita basis, Yukon residents spent the most on transportation, an average of \$3,781 in 2001, while Nunavut residents spent the least, only \$1,031. Of the other provinces and territories, only Ontario, Alberta and British Columbia residents spent more than the national average of \$3,080.

On average, 15.4 per cent of total personal expenditures by Canadians in 2001 had to do with transportation. Personal transportation spending in the Yukon accounted for 16.5 per cent of total personal spending, the highest proportion of any province or territory.

Personal expenditures on transportation represented 9.2 per cent of final domestic demand in Canada in 2001. It made up over nine per cent in New Brunswick, Quebec and Ontario, but only 7.1 per cent in the Yukon, 3.5 per cent in the Northwest Territories and 2.1 per cent in Nunavut.

Table 2-9 shows personal expenditures on transportation by province and territory in 2001.

**TABLE 2-9: PERSONAL EXPENDITURES ON TRANSPORTATION IN THE PROVINCES AND TERRITORIES, 2001**

	<i>Millions of Dollars</i>	<i>Per capita Dollars</i>	<i>Per cent of Total Provincial Personal Expenditures</i>	<i>Per cent of Total Canadian Personal Transportation Expenditures</i>	<i>Per cent of Provincial Final Domestic Demand</i>
Newfoundland and Labrador	1,357	2,541	15.5	1.4	8.4
Prince Edward Island	355	2,559	15.0	0.4	8.6
Nova Scotia	2,546	2,700	14.8	2.7	8.4
New Brunswick	2,101	2,780	16.2	2.2	9.3
Quebec	21,601	2,912	15.9	22.5	9.7
Ontario	38,768	3,259	15.6	40.5	9.6
Manitoba	2,882	2,508	13.4	3.0	8.1
Saskatchewan	2,562	2,519	14.0	2.7	8.0
Alberta	10,620	3,472	15.7	11.1	8.1
British Columbia	12,215	2,978	14.4	12.7	8.9
Yukon	114	3,781	16.5	0.12	7.1
Northwest Territories	124	3,008	12.9	0.13	3.5
Nunavut	29	1,031	7.8	0.03	2.1
<b>Canada</b>	<b>95,816</b>	<b>3,080</b>	<b>15.4</b>	<b>100.0</b>	<b>9.2</b>

Source: Statistics Canada





# GOVERNMENT SPENDING ON TRANSPORTATION

# 3

*In fiscal year 2001/02, all levels of government increased their transportation expenditures.*

This chapter gives an overview of the financial implications of public-sector involvement in transportation. First, it summarizes all transportation expenditures and revenues by level of government. Second, it gives a synopsis of federal and provincial revenues from transportation users, followed by a detailed breakdown of expenditures by level of government. Finally, it presents consolidated expenditures by mode.

## GOVERNMENT TRANSPORTATION EXPENDITURES

For several years, government expenditures on transportation evolved within a \$17 billion to \$18 billion range. As Table 3-1 shows, however, transportation expenditures by all levels of government soared in fiscal year 2001/02 to \$19 billion, an increase of \$1.2 billion, or 6.4 per cent, over 2000/01. All levels of government contributed to this growth. The federal government added \$259 million, mostly as a result of September 11, 2001. While federal transport expenses in 2002/03 are expected to increase by a further 9.2 per cent, non-tax revenues from transport users are expected to more than double. Combined provincial/territorial and local expenditures increased by \$1.2 billion, or 6.9 per cent per cent, in 2000/01. Over the last four years, expenditures by provincial/territorial governments have decreased by \$311 million; however, local governments have more than made up for this by increasing their spending by almost \$2.2 billion since 1998/99.

**TABLE 3-1: GOVERNMENTS' GROSS AND NET EXPENDITURES ON TRANSPORTATION**

(Millions of dollars)

	1998/99	1999/ 2000	2000/01	2001/02	2002/03 <sup>1</sup>
Transport Canada expenses (gross) <sup>1</sup>	1,415	1,252	1,233	1,492	1,348
Other federal expenses (gross) <sup>2</sup>	892	743	774	832	1,189
Provincial/Territorial <sup>3</sup>	7,995	8,838	7,489	7,684	N/A
Local <sup>4</sup>	7,008	7,740	8,481	9,207	N/A
Total gross transport expenditures	17,310	18,572	17,977	19,215	N/A
Gross expenditures per capita	571	607	582	616	N/A
Transport Canada revenues	663	386	352	372	423
Other federal revenues <sup>5</sup>	42	46	45	44	420
Specific tax revenues from transport users <sup>6</sup>	13,207	13,369	13,207	13,361	N/A

Note: N/A = Not available. More yearly data are available in the Addendum on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca))

1 Excludes transfers of \$24 million to Crown corporations not involved in transport in 2002/03

2 Large increases related to the creation of the Canadian Airport Security Agency

3 Net of federal transfers as reported by the provinces/territories.

4 Calendar year basis; net of federal and provincial/territorial transfers

5 Revenues from the airport security fee, and Coast Guard services and small port users

6 Federal excise fuel taxes, and provincial motive fuel taxes and licence fees

F Forecast at January 31, 2003, of full year

Source: Main Estimates of the Government of Canada; Transport Canada, Finance Directorate; The Canadian Transportation Agency; Internal reports from several agencies and federal departments; Provincial/territorial departments of transportation; Statistics Canada, Public Institutions Division, Unpublished data

Government fees and tax revenues from transport users continued to be relatively stable, reaching \$13.8 billion in 2001/02, a marginal growth of 1.3 per cent over the previous year.

## FEDERAL EXPENSES RELATED TO TRANSPORT FACILITIES AND SERVICES

The Government of Canada operates roads and bridges, airports, harbour/ports and marine navigational and rescue services (Coast Guard). It also provides modal safety, security and policy services. Transport Canada performs several multimodal activities, ranging from security and emergency preparedness services to

the regulation and monitoring of the transport of dangerous goods. Table 3-2 shows that total direct federal transport expenses are forecast to reach \$1.7 billion in 2002/03, 15 per cent more than the previous year. After several years of decline, these expenses had already showed a nine per cent increase in 2001/02.

These activities can be divided into two broad categories: operations; and safety, security and policy. Expenses related to operations declined in 2002/03 by 2.9 per cent to \$960 million. Increases in federal expenditures on road and bridges reflect larger capital expenditures on the Jacques Cartier and Champlain bridges in Montreal. Expenditures on safety, security and policy are expected to reach \$669 million in 2002/03, almost double that of 1998/99. Major increases in recent years are related to new commitments to security in the air sector.

**TABLE 3-2: FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES, 1998/99 – 2002/03**

	(Millions of dollars)				
	1998/99	1999/ 2000	2000/01	2001/02	2002/03 <sup>f</sup>
Airports	140	123	92	85	66
Aircraft services	64	51	70	51	60
Coast Guard	471	480	496	520	503
Ports and harbours <sup>1</sup>	86	99	107	112	126
Roads and bridges <sup>2</sup>	156	141	154	209	196
Research and development	12	13	11	11	9
<b>Operations</b>	<b>929</b>	<b>907</b>	<b>929</b>	<b>989</b>	<b>960</b>
Canadian Air Transport Security Authority (CATSA)					284
Air Safety and Policy <sup>3</sup>	126	142	154	155	165
Marine Safety and Policy	56	47	49	49	56
Road and Rail Safety and Policy <sup>4</sup>	40	41	40	43	51
Multimodal Policy and Safety <sup>5</sup>	125	112	112	174	138
<b>Safety and Security</b>	<b>346</b>	<b>342</b>	<b>354</b>	<b>422</b>	<b>669</b>
<b>Corporate Services of Transport Canada</b>	<b>95</b>	<b>96</b>	<b>111</b>	<b>113</b>	<b>119</b>
<b>Total</b>	<b>1,370</b>	<b>1,346</b>	<b>1,395</b>	<b>1,524</b>	<b>1,748</b>

Note: More detailed data are available in the Addendum on Transport Canada's Web site ([www.tc.gc.gc.ca](http://www.tc.gc.gc.ca)).

1 Includes expenses for small fishing ports by Fisheries and Oceans Canada.

2 Includes contributions by Transport Canada to the Champlain and Jacques Cartier Bridges, and expenses by the National Capital Commission, Public Works and Government Services Canada, Parks Canada, and Indian and Northern Affairs.

3 Includes expenses of the Civil Aviation Tribunal.

4 Larger expenditures in 1998/99 related to the purchase of a ferry.

5 Includes expenses for regulation and the inspection of the transport of dangerous goods, Security and Emergency Preparedness, Research and Development, the Canadian Transportation Agency and other multimodal safety, policy and analysis. Large expenses in 2000/01 related to the purchase of explosives detection equipment.

F Forecast at January 31, 2003, of full year.

Source: Transport Canada

## FEDERAL SUBSIDIES TO TRANSPORTATION

In 2002/03, total federal direct subsidies, grants and contributions are projected to drop to \$789 million, almost \$120 million, or 1.4 per cent, less than in 2001/02. The major sources of change are lower subsidies to VIA Rail, which dropped by \$55 million, and the termination of the compensation program (almost \$100 million) to air carriers for the closure of Canadian airspace after the events of September 11, 2001. Excluding these programs, federal transfers to transport would have increased by \$139 million, mostly as a result of renewed funding of the Canada Infrastructure program. The major reduction of funding since 1998/99 can be traced to the cessation of payments to NAV CANADA and highway transition programs. Table 3-3 presents more details on these subsidies.

**TABLE 3-3: DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE, 1998/99 – 2002/03**

	(Millions of dollars)				
	1998/99	1999/ 2000	2000/01	2001/02	2002/03 <sup>f</sup>
<b>Air Mode</b>					
Airport (Operation and Capital)	45.0	38.7	46.8	50.6	36.2
NAV CANADA	215.8	-	-	-	-
Airport Assistance <sup>1</sup>	-	-	-	123.9	28.0
Other	2.9	1.8	1.5	2.5	3.3
<b>Total Air</b>	<b>263.8</b>	<b>40.5</b>	<b>48.3</b>	<b>177.0</b>	<b>67.5</b>
<b>Marine Mode</b>					
Marine Atlantic	29.1	114.8	38.6	36.8	46.4
Port Divestiture Fund <sup>2</sup>	6.7	22.0	45.4	21.6	22.3
Other ferry and coastal services	32.0	31.8	30.8	31.7	32.2
Other <sup>3</sup>	12.5	3.9	38.3	21.0	8.9
<b>Total Marine</b>	<b>80.3</b>	<b>172.5</b>	<b>153.1</b>	<b>111.0</b>	<b>109.8</b>
<b>Rail Mode</b>					
VIA Rail	200.5	170.3	231.6	310.2	255.7
Hopper cars	21.0	20.0	18.2	16.4	16.0
Grade crossings	7.2	7.4	7.5	7.5	7.5
Other	8.6	8.2	8.4	8.5	9.0
<b>Total Rail</b>	<b>237.2</b>	<b>206.0</b>	<b>265.7</b>	<b>342.2</b>	<b>288.3</b>
<b>Highway Modes</b>					
Transition programmes <sup>4</sup>	93.4	57.5	15.3	29.6	37.5
Highway agreements	125.9	107.2	62.8	69.0	102.5
Infrastructure program <sup>5</sup>	81.7	-	-	7.7	113.3
Fixed link in P.E.I.	44.3	46.1	47.2	48.6	50.1
Other	9.9	18.6	20.1	13.7	18.3
<b>Total Highway Modes</b>	<b>355.2</b>	<b>229.4</b>	<b>145.4</b>	<b>168.5</b>	<b>321.7</b>
Other subsidies, n.e.s.	0.4	0.2	0.5	1.1	1.6
<b>Grand Total</b>	<b>936.5</b>	<b>648.5</b>	<b>612.9</b>	<b>800.3</b>	<b>788.9</b>

Notes: More yearly data are available in the Addendum on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)). Transport-related expenditures by regional development agencies have been added, retroactively to 1996/97. P.E.I.: Prince Edward Island, n.e.s.: not elsewhere specified.

1 Includes air carrier assistance of \$99 million in 2001/02 and a cabin enhancement program of \$28 million in 2002/03.

2 Includes a payment of \$36 million to the Government of Québec for the transfer of ferry wharves.

3 Includes a payment of \$21.4 million to the Hamilton Harbour Commission for the settlement of a civil litigation.

4 Offset federal programs to the elimination of the WGTA and ARFA programs; Labrador ferry service buyout in 1997/98.

5 Includes a transfer of \$62.3 million to the Toronto Transit Authority.

F Forecast at January 31, 2003, of full year.

Source: Transport Canada; Fisheries and Oceans Canada; Provincial/territorial departments of transportation

## DISTRIBUTION OF PROVINCIAL/TERRITORIAL AND LOCAL EXPENDITURES BY PROVINCE<sup>1</sup>

In 2001/02, provincial, territorial and local governments spent \$17 billion on transportation; this was \$0.9 billion, or 7.5 per cent, more than in 2000/01. Local expenditures increased by \$0.8 billion (nine per cent). The provinces/territories spent \$7.9 billion, 2.6 per cent more than in 2000/01, returning to the level of expenditures of the mid 1990s.

Since 1998/99, provincial/territorial and local governments have spent an average of four per cent per year more on transportation. Alberta, Saskatchewan and Quebec had the largest relative increases, while New Brunswick and the Northwest Territories had decreasing expenditures.

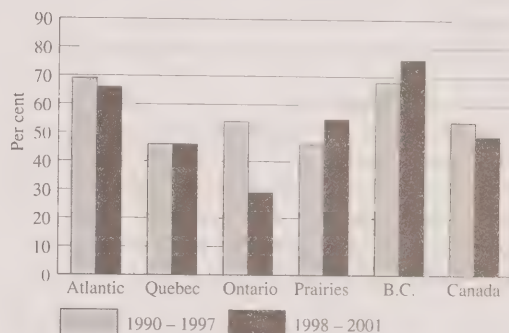
Federal transfers were equivalent to 1.1 per cent of transport spending by local and territorial governments in 2001/02. The Yukon was the most reliant province/territory on federal transfers, with some 30 per cent of its transport spending dependent on federal transfers.

Spending on roads and highways is the most important category of transport-related expenditures for all provinces, accounting for 37 and 42 per cent, respectively, of all net spending by provincial/territorial and federal governments. Other modes are also significant for some provinces/territories. Remoteness makes spending on air transportation more significant for the Northwest Territories, where it accounted for 15 per cent of transport spending in 2001/02. The relative importance of air transport spending in the territories has varied from year to year, reaching as high as 38 per cent in 1995/96.

Although Ontario's transit spending has fallen by \$0.6 billion since 1998/99, its share of total transport expenditures, at 22 per cent, is the largest of all provinces. Local governments have replaced provincial governments as the main source of expenditures on public transit systems: in 2001/02, they accounted for 93 per cent of expenditures; in the 1990s, they averaged 46 per cent per year. Expenditures on transit are also significant in Quebec, British Columbia and Alberta.

Figure 3-1 illustrates the trends in the role of the provinces in non-federal transport expenditures over two periods, 1990 to 1997 and 1998 to 2001. The western provinces have increased their share of transport spending by almost 10 per cent each. For the central and eastern provinces, the pattern is reversed. In Atlantic Canada and Quebec, the declining importance of the provincial governments is marginal. The reduction of the provincial role is most evident in Ontario, where the share of transport expenditures dropped from 54 per cent in 1990 – 1997 to 29 per cent in 1998 – 2001. As a result, the Ontario government spent about half as much on transport in 2001/02 than it did in the mid-1990s.

FIGURE 3-1: PROVINCIAL SHARE OF LOCAL AND PROVINCIAL TRANSPORT EXPENDITURES, 1990 – 1997 AND 1998 – 2001



Source: Transport Canada

## TOTAL TRANSPORTATION REVENUES BY LEVEL OF GOVERNMENT

The federal government generates revenues from the use of transportation facilities and services. Revenues from cost-recovery initiatives are credited to the federal departments' budget, while revenues from other sources are credited to the federal government's Consolidated Revenue Fund. Both are part of this analysis. Excise fuel taxes collected by the federal and provincial governments, as well as provincial licence and other fees, constitute revenues collected from transport users. Table 3-4 highlights government revenues from transport users from 1998/99 to 2002/03.

<sup>1</sup> For more detailed data, please see the tables for Chapter 3 in the Addendum on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca))



**TABLE 3-4: GOVERNMENT REVENUES FROM TRANSPORT USERS, 1998/99 – 2002/03**

	(Millions of dollars)				
	1998/99	1999/ 2000	2000/01	2001/02	2002/03 <sup>1</sup>
Air Transportation Tax <sup>1</sup>	295	3	-	-	-
Airport revenues	267	271	250	264	316
Aircraft services	28	27	28	34	30
Air security fee	-	-	-	-	375
Marine revenues <sup>2</sup>	73	79	72	76	80
Leases of hopper cars <sup>3</sup>	12	13	14	14	10
Other fees and recoveries <sup>4</sup>	30	38	35	28	32
Total credited	705	431	397	416	843
Federal fuel taxes	4,742	4,786	4,807	4,758	N/A
Public and non-transport use <sup>5,6</sup>	430	438	447	439	
Road <sup>6</sup>	4,138	4,164	4,164	4,136	N/A
Other modes <sup>6</sup>	174	185	196	183	N/A
Provincial/territorial fuel taxes	6,831	6,976	6,923	7,060	N/A
Sales tax equivalent <sup>6</sup>	581	643	763	729	N/A
Road <sup>6</sup>	5,941	5,996	5,852	6,050	N/A
Other modes <sup>6</sup>	309	336	308	281	N/A
Provincial/territorial Licences/fees	2,645	2,688	2,687	2,711	N/A
Total tax revenues from road users	12,724	12,848	12,703	12,897	N/A
Total fuel tax revenues from other transport users	483	521	504	494	
Total tax revenues from transport users	13,207	13,369	13,207	13,361	N/A
Total tax and fee revenues from transport users	13,912	13,800	13,605	13,777	N/A

Note: N/A = Not available. More yearly data are available in the Addendum on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

Since 1996/97, the Air transport tax, formerly netted against Transport Canada budget has been credited to the Consolidated Revenue Fund.

1 Includes Coast Guard user fees and sales of marine assets credited to the Consolidated Revenue Fund.

2 Credited to the Consolidated Revenue Fund.

3 Includes inter and intra-departmental transfers for services and various regulatory, licensing and administrative fees credited to either Transport Canada or the Consolidated Revenue Fund.

4 Estimated fuel taxes from mobile users off the public transport system.

5 Estimates by Transport Canada (revised).

6 Estimates based on the sales tax that would have applied to provincial fuel prices before provincial fuel taxes.

F Forecast at January 31, 2003, of full year.

Source: Transport Canada; Fisheries and Oceans Canada; Provincial/territorial departments of transportation

In 2001/02, the most recent year for which budget information is available for all government levels, federal and provincial/territorial governments collected \$13.8 billion from transport users through fuel taxes and permit and licence fees. This was 1.3 per cent more than in 2000/01. By far, road fuel taxes make up the largest component of government tax revenues from transportation, averaging \$10 billion, or 73 per cent of all government revenues from transport users, from 1998/99 to 2001/02. For a while, road fuel tax revenues were showing the fastest growth. In recent years, the growth of road fuel demand and road fuel tax revenues was moderated by higher fuel prices. Some of this effect was cancelled by a 12 per cent

gain in disposable income between 1999 and 2001. Other fuel tax revenues decreased in 2002/03 by \$10 million, or two per cent, due to a combination of reduced activity and better fuel efficiency in other modes.

In 2002/03, federal government transportation revenues other than fuel taxes are expected to total \$843 million, more than doubling the 2001/02 levels. The new air security fee would yield \$375 million.<sup>2</sup> Another gain in excess of \$52 million was made from airport revenues (mostly lease rents). Marine fees are expected to bring in around \$80 million. Other federal revenues not credited to transport, such as the revenues from the leases of hopper cars or the sale of port assets, are also reported in Table 3-4.

## OVERVIEW OF EXPENDITURES AND REVENUES BY MODE

This section summarizes consolidated federal expenses and expenditures by the provincial/territorial and local governments, netted of transfers received from other levels of government from 1998/99 to 2002/03. Table 3-5 shows transport expenditures and revenues by mode and level of government for this period.

Total government spending on roads has risen by 4.8 per cent per year since 1998/99, reaching \$13.7 billion in 2001/02. Road expenditures now account for 71 per cent of overall spending on transportation.

Public funding on transit systems peaked at \$3.1 billion<sup>3</sup> in 1998/99 but then declined to \$2.6 billion in the following year. Spending has since rebounded to \$2.7 billion in 2001/02. In that year, public spending on transit systems accounted for 14 per cent of all government expenditures on transportation, compared with 18 per cent in 1998/99.

In 2001/02, the air mode accounted for 2.8 per cent of gross government spending on transportation. Air-related public spending, which had been declining until 1999/2000, has since recovered by 28 per cent. Much of the growth is related to safety and security initiatives. Public spending related to the marine mode, after excluding the transfer of the BC Ferry debt to the provincial government, continues to hover around \$1 billion. The share of the marine mode of public spending on transportation reached five per cent in 2001/02, a level that has not changed significantly since the mid-1990s. Public spending on rail has grown by 15 per cent per year since 1998/99, accounting for two per cent of gross

2 The security tax revenues are designed to recover airport security expenditures not necessarily made in the same year.

3 Revised figure.

government spending on transportation in 2000/01. Although rail passenger subsidies declined in 2001/02, they still make up about 80 per cent of total spending on rail. In 2001/02, the federal and provincial governments spent \$1.9 billion on the air, marine and rail modes combined, while generating \$0.9 billion in fees and revenues from transport users.

The category "Other/Overhead" in Table 3-5 includes overhead expenses by all levels of government and expenditures related to multimodal activities. About four per cent of government transportation spending falls under this category.

**TABLE 3-5: TRANSPORT EXPENDITURES/REVENUES  
BY MODE AND LEVEL OF GOVERNMENT,  
1998/99 – 2002/03**

(Millions of dollars)					
	1998/99	1999/ 2000	2000/01	2001/02	2002/03 <sup>F</sup>
<b>Federal Operating &amp; Maintenance, Capital and Subsidies<sup>1</sup></b>					
Air	594	356	364	469	618
Marine	692	799	804	792	794
Rail	252	221	282	360	309
Road	536	396	323	403	548
Other/Overhead	233	222	234	300	268
Subtotal	2,307	1,995	2,007	2,324	2,537
<b>Provincial/Territorial/Local<sup>2</sup></b>					
Air	75	62	72	72	N/A
Marine	120	1,259	176	183	N/A
Rail	2	5	21	27	N/A
Road	11,398	12,291	12,598	13,317	N/A
Transit	3,085	2,554	2,591	2,747	N/A
Other/Overhead	323	401	511	545	N/A
Subtotal	15,003	16,577	15,970	16,891	N/A
<b>Total Expenses: All Government Levels</b>					
Air	669	423	437	541	N/A
Marine	812	2,059	980	975	N/A
Rail	254	226	302	387	N/A
Road	11,934	12,687	12,922	13,720	N/A
Transit	3,085	2,554	2,591	2,747	N/A
Other/Overhead	556	623	745	845	N/A
Subtotal	17,310	18,572	17,977	19,215	N/A
<b>Government Revenues from Transport Users</b>					
Road users	12,724	12,848	12,704	12,897	N/A
Rail, air and marine	1,174	936	884	869	N/A
Multimodal	14	16	17	11	N/A
Total	13,912	13,800	13,605	13,777	N/A

Note: N/A = Not available. More details are available in the Addendum on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

1 Transport Canada; Main Estimates and Public Accounts of the federal departments concerned.

2 Provincial/territorial departments of transportation; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be under reported. Net expenses by local governments are only netted against transfers reported by provincial governments. Statistics Canada, Public Institutions Division; data are on a calendar year basis.

F Forecast at January 31, 2003, of full year.

Sources: Transport Canada; Fisheries and Oceans Canada; Provincial/territorial departments



# TRANSPORTATION SAFETY AND SECURITY

# 4

*The safety and security of Canada's transportation system continued to improve in 2002, demonstrated by decreases in the number of accidents in all modes and by security enhancements implemented since the September 11, 2001, terrorist attacks. Public confidence in the safety and security of the transportation system returned to near pre-September 11, 2001, high-confidence levels.*

A safe and secure transportation system is critical to Canada's well being. Canadians rely on all forms of transportation to take them where they want to go and also to deliver their goods. Canada's transportation system moves more than \$1 trillion in goods every year. Forty per cent of the country's Gross Domestic Product (GDP) is directly linked to trade, much of it in merchandise that is transported by truck and train, by ship and plane, to and from Canada and the United States and markets around the globe.

A threat to the safety and security of Canada's transportation system could, potentially, affect Canadians personally and their ability to travel; it could also affect Canada's economic prosperity and its ability as a nation to trade effectively. Thus, preserving the safety and security of Canada's transportation system remains Transport Canada's primary focus.

Canada already has one of the safest and most secure transportation systems in the world and continues to work diligently to further improve the system. In upholding the safety and security of the transportation system, Transport Canada carries out its objectives through three principal activities: rulemaking, oversight and outreach. Through its rulemaking efforts, Transport Canada establishes and implements legislation, regulations, standards and policies. Oversight activities include issuing licences, certificates, registrations and permits; monitoring compliance through audits, inspections and surveillance; and taking appropriate enforcement action in instances of non-compliance. Outreach activities involve efforts to promote, educate and increase awareness of safety and security issues.

The safety and security of the transportation system is a shared responsibility. Transport Canada works with governments, transportation industries, agencies, associations and international organizations. Transport

Canada collaborates with other federal departments, whose programs and services may be affected by transportation activities. Transport Canada also works with provincial, territorial and municipal governments particularly concerning the maintenance of the highway system and enforcement of road safety, as well as the co-delivery of the Transportation of Dangerous Goods (TDG) program. Furthermore, Transport Canada works closely with transportation sector industries, agencies and associations, all of which have a vested interest in the transportation infrastructure, regulatory regime and safety. Additionally, Transport Canada collaborates with its international partners — such as the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) — to harmonize safety and security standards and to share best practices in safety and security systems.

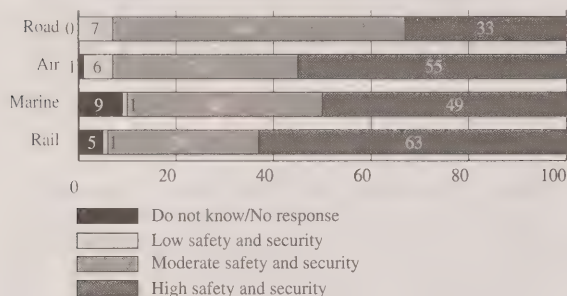
Since September 11, 2001, Transport Canada — working with government and industry stakeholders — has increased its efforts to be more vigilant, to prevent terrorist activity and to implement more stringent transportation safety and security standards. As a result, Canada has maintained its good transportation safety record. For instance, compared with 2001, accidents were down in the aviation, rail and marine sectors. In fact, the number of accidents involving Canadian-registered aircraft was the lowest in 25 years. Moreover, the number of transportation-related fatalities has remained below the five-year average in aviation, rail, road and the transportation of dangerous goods. The positive outcomes in transportation have been influenced by enhancements and initiatives in safety and security as seen in 2002, which have significantly improved public confidence in the safety and security of the transportation system.



An August 2002 survey conducted by EKOS Research gathered Canadians' perceptions of transportation safety trends. This survey found that, overall, the majority of Canadians had a high level of confidence in the safety and security of the transportation modes (see Figure 4-1).

**FIGURE 4-1: TRACKING THE SAFETY OF MODES, 2002**

*Canada's transportation system includes air, rail, road, and marine travel... How would you rate the overall safety and security of each of the following modes of transportation?*



Source: EKOS Research Associates

This chapter reviews developments and initiatives concerning the safety and security of Canada's transportation system during 2002. The second section discusses transportation security and reviews the various enhancements undertaken by Transport Canada during 2002.

## TRANSPORTATION SAFETY

This section presents the most recent safety-related statistics for all modes of transportation, as well as for the transportation of dangerous goods. Reports of accidents and incidents made to the Transportation Safety Board are one of the principal sources for safety-related occurrence statistics. Accidents are those occurrences that have resulted in the loss of or damage to life, health and property, while incidents are those that have the potential to result in an accident. As occurrence statistics, they provide indicators of the transportation system's safety performance and help focus efforts on those initiatives and activities that have high safety benefits.

In 2002, Canada continued to maintain a good safety record. The number of accidents involving Canadian-registered aircraft operations (273) was down eight per cent, while accidents involving federally regulated rail operations (985) dropped by seven per cent. Marine accidents (483) were also down by seven per cent. The latest available statistics for road casualty collisions are from 2001; they show a more moderate albeit significant decrease of 2.7 per cent from 2000 levels. In 2002, reportable accidents involving the transportation of dangerous goods increased to 580. This increase may be attributed in part to improved awareness and changes in accident-reporting regulations. Table 4-1 summarizes the modal safety record in 2002, including the transportation of dangerous goods.

**TABLE 4-1: SUMMARY OF TRANSPORTATION SAFETY STATISTICS BY MODE, 2001 AND 2002**

	Aviation <sup>1</sup>	Marine <sup>2</sup>	Rail <sup>3</sup>	Road <sup>4</sup>	TDG
<b>Accidents</b>					
2002	273	483	985	154,268	580
2001	295	517	1,060	158,499	436
Five-year average (1997 – 2001)	339.6	558.6	1,088.8	155,005	457
<b>Fatalities</b>					
2002	47	25	96	2,778	1
2001	61	34	99	2,926	0
Five-year average (1997 – 2001)	70.6	33.2	100.4	3,003	2
<b>Accident Rate</b>					
2002	7.3	3.0 <sup>e</sup>	10.9	49.7	N/A
2001	8.2	2.8	11.8	51.0	N/A
Five-year average (1997 – 2001)	9.0	3.7	12.1	49.9	N/A

Note: Preliminary data for 2002. e = estimated. TDG = transportation of dangerous goods. N/A = Not available.

<sup>1</sup> Canadian-registered aircraft, other than ultralights. Accident rates per 100,000 hours flown.

<sup>2</sup> Based on 1,000 commercial vessel trips.

<sup>3</sup> Railways under federal jurisdiction. Rates per million train-miles.

<sup>4</sup> Road statistics relate to 2001 (most recent statistics) and the 1996 – 2000 five-year average.

Road accidents are casualty collisions, which exclude collisions in which only property is damaged. Rates per 100 million vehicle-kilometres.

Source: Transportation Safety Board, Transport Canada and Statistics Canada

For information on accident trends in 2002 and over the last five years (1997 to 2002), see Table A4-1 in the Addendum. All transportation modes continued to reflect a downward trend in the number of accidents over the last five years.

Another indicator of the safety performance of the transportation system is the number of fatalities. In 2002, there was only one fatality caused by a dangerous goods transport accident. The aviation, marine and rail modes showed a decrease in fatalities in 2002 from 2001. From 2000 to 2001 (the most recent statistics), road fatalities decreased by five per cent to 2,778.

Modal trends and comparisons can be misleading if the specifics of each mode, including the level of activity and therefore the exposure to risk, are not taken into account. That said, the 2002 accident rate per activity level for aviation and rail continued to reflect a downward trend. It is important to note that these rates are only a basis for interpreting the occurrence statistics in each mode and not for comparing across modes, given that the activity measure is particular to each mode and may have its own set of data limitations.

## RAIL

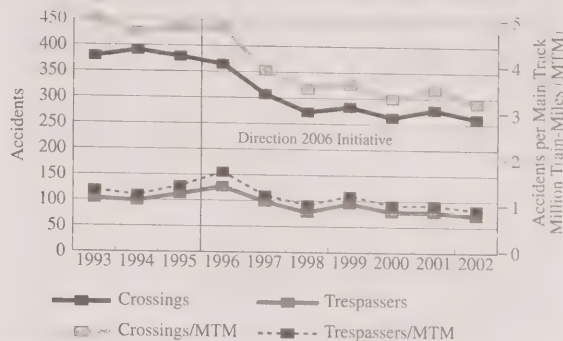
In 2002, the number of reported rail accidents decreased by seven per cent, from 1,060 in 2001 to 985 in 2002. This continued a notable five-year downward trend of 10 per cent. (The 1997–2001 average is 1,089 accidents). This trend was also evident in an accident rate of 10.9 per million train-miles in 2002 (down from 11.8 in 2001) and the five-year average (12.1 for 1997–2001). Of reported accidents, 47 per cent occurred on non-main tracks and involved either a derailment or collision. These accidents are generally minor, as they usually involve rolling stock travelling at slow speeds and generally pose less risk to the travelling public. The reported rail accidents presented in this section, and in tables A4-2 to A4-4 in the Addendum, cover the rail networks under federal jurisdiction only.

In 2002, there were 91 fatal accidents (resulting in 96 fatalities) and 63 serious accidents (resulting in 68 serious injuries). Fatalities and serious injuries decreased in 2002, by three and 23, respectively. The majority of these fatalities and injuries resulted from crossing or trespasser accidents. For a provincial breakdown of accidents, fatalities and serious injuries involving railways under federal jurisdiction, see tables A4-3 and A4-4 in the Addendum.

**Direction 2006 Initiative** — Direction 2006 is a strategic partnership initiative aimed at reducing crossing and trespasser accidents by 50 per cent by 2006. (For more information on Direction 2006, visit [www.tc.gc.ca/Railway/Dir2006\\_e.htm](http://www.tc.gc.ca/Railway/Dir2006_e.htm).) Crossing and trespasser accidents continued to account for the greatest number of fatal and serious accidents: 99 per cent of the fatalities and 91 per cent of the serious injuries reported in 2002. Crossing accidents remained below the five-year average and decreased from 278 in 2001 to 261 in 2002, a 6.1 per cent drop. Fatalities related to crossing accidents were up slightly, from 41 to 46, while serious injuries declined from 47 to 42. Trespasser accidents decreased from 79 in 2001 to 72 in 2002. Trespasser fatalities decreased from 56 to 49, while serious injuries remained about the same (22).

Figure 4-2 presents recent trends in crossing and trespasser accidents.

FIGURE 4-2: CROSSING AND TRESPASSER ACCIDENTS, 1993–2002



Source: Transport Canada, based on Transportation Safety Board data

As Addendum Table A4-4 shows, only public passive crossing accidents increased from 2001 to 2002 (from 77 to 96) and over the five-year average (92.6), while all others decreased. Transport Canada, together with its partners and stakeholders, is finalizing new regulations that will establish clear direction and consistency in the construction and maintenance of crossings and access control along rail lines. Railway Safety Inspectors, in collaboration with railways and road authorities, conduct risk assessments of highway–railway grade crossings, and Transport Canada administers a crossing funding program for those crossings at greatest risk. In addition, to reduce risk of accidents at night, Transport Canada funded initiatives in 2002 to apply reflective material on the front and back of railway crossing signs and supporting posts at 14,000 passive grade crossings across the country.

**Passenger safety** — Accidents involving passenger/commuter trains have remained constant over the last five years and in 2002 accounted for seven per cent of total rail accidents. In 2002, Transport Canada undertook a review of rail passenger service safety rules and, in consultation with VIA Rail, also undertook the installation of crash energy management technology for passenger cars.

**Work/Rest Rules** — In-depth investigations have demonstrated that fatigue is a major factor in transportation accidents. In consultation with railway unions, the Railway Association of Canada and its members developed work/rest rules for rail operations employees. In 2002, Transport Canada further reviewed these rules and consulted with industry and fatigue management experts. The rules are comprehensive and enforceable, allowing railways to better manage the fatigue factor in their operations.

**Safety Management Systems** — One of the more important and evolving regulatory directions Transport Canada has embarked upon is the implementation of Safety Management Systems (SMS) concepts to instill a strong safety culture in the transportation industry. SMS for railways came into force on March 31, 2001, and railway companies have submitted their SMS information for an initial three-year audit cycle. To date, two thirds of the information submitted has been reviewed, indicating that companies, in general, are developing and adopting SMS. In 2002, Transport Canada continued to work with railway companies to integrate safety into day-to-day operations, address systemic causes of accidents, and foster greater safety self-compliance and internal responsibility within the railway community. For more information on these and other initiatives, visit [www.tc.gc.ca/railway/en/menu.htm](http://www.tc.gc.ca/railway/en/menu.htm).

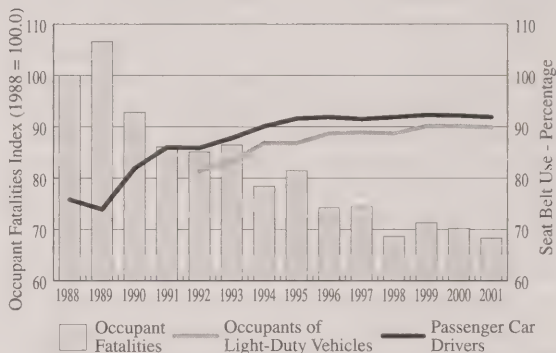
## ROAD

Over the last five decades, Canada's road safety record has continued to improve. In 2001 (most recent statistics), there were three per cent fewer casualty collisions than in 2000. One of the most notable improvements among these indicators is a five per cent decrease in fatalities: 148 fewer fatalities in 2001 than in 2000. The three per cent decline in road-related injuries translates into 6,245 fewer injuries in 2001. Addendum Table A4-5 illustrates annual and longer-term trends in road-related casualty collisions that have resulted in fatalities and injuries. The longer-term downward trend in fatalities (723 fewer fatalities in 2001 than in 1992, when there were 3,501) has helped reduce the estimated annual cost to Canadians of up to \$25 billion. These downward trends are confirmed by a decrease in the 2001 collision rate per 100 million vehicle-kilometres over the 2000 rate (from 51.0 to 49.7), and over the longer term by a decrease in collisions, fatalities and injuries despite the continued increase in the annual number of motor vehicle registrations (e.g. 1.5 fatalities per 10,000 motor vehicles in 2001 compared with 2.1 in 1992). Data by provincial jurisdiction is shown in Addendum Table A4-6.

**Road Safety Vision 2010** — Road Safety Vision 2010 (RSV 2010) was adopted in the fall of 2001. It has a national target to decrease the average number of road users killed or seriously injured by 30 per cent by 2010. (For more information on Canada's road safety record, including international comparisons, and on RSV 2010 targets and the nine sub-target areas, visit [www.tc.gc.ca/roadsafety/vision/2010/en/menu.htm](http://www.tc.gc.ca/roadsafety/vision/2010/en/menu.htm).) Figure 4-3 and tables A4-7 to A4-9 in the Addendum demonstrate how past safety initiatives in RSV 2010 sub-target areas have contributed to reducing fatalities over the years.

**Seat belts** — One of the key RSV 2010 sub-targets is to increase seat belt-wearing rates. A national seat belt survey conducted each June since 1988 shows that the rate for passenger car drivers has reached a plateau, hovering just above 90 per cent since 1995. The increased use of seat belts has contributed to saving thousands of lives over the years. In 2001, almost 40 per cent of those killed and nearly 19 per cent of those seriously injured were not using a seat belt at the time of the collision.

FIGURE 4-3: OCCUPANT FATALITIES DECREASE AS SEAT BELT-WEARING RATES INCREASE, 1988 – 2001



Source: Transport Canada, National Seat Belt Survey; Traffic Accident Information Database

**Drinking drivers** — As Table A4-7 in the Addendum shows, the percentage of fatally injured drivers who were tested and found to have over the legal limit of blood alcohol concentration (from 40 per cent in the late 1980s with over 81 mg% in blood alcohol concentration to less than 30 per cent in recent years) has declined steadily. The same is true for the number of persons charged with impaired driving offences (70,539 in 2001 compared with 112,000 in 1991). It is not known whether the decrease in charges is a result of public education programs, stiffer penalties or reductions in police enforcement, or a combination of all these factors. Despite these declines, alcohol was still a contributing factor in approximately 1,200 road fatalities and 3,600 serious injuries in 1999 (latest data).

**Young drivers and passengers** — Another Road Safety Vision 2010 sub-target is to decrease the number of young drivers and passengers (aged 16–19 years) killed or seriously injured in crashes. Among seven age groups, the youth group (aged 15–19 years) had the smallest proportion of all drivers involved in fatal collisions (nine per cent) and injury collisions (10 per cent) but the highest driver involvement rates in fatal and injury collisions rates per 100,000 licensed drivers. As Addendum Table A4-8



shows, a promising three-year trend indicates that this same age group had the greatest decreases in involvement rates in fatal collisions and in injury collisions.

**Commercial Vehicles** — Another RSV 2010 sub-target is to reduce the number of road users killed or seriously injured in crashes involving commercial vehicles. As Addendum Table A4-9 shows, from 1997 to 2001, commercial vehicles accounted for about eight per cent of all vehicles involved in all types of collisions, yet collisions involving commercial vehicles were the source of roughly 20 per cent of all road fatalities. In 2001, 548 fatalities resulted from collisions involving commercial vehicles. Fatigue is recognized as a major factor in transportation accidents. Consequently, a key initiative in recent years has been to revise and modernize the hours of service rules under the National Safety Code, allowing trucking companies to better manage the fatigue factor in their operations. For more information on the hours of service rules, visit [www.tc.gc.ca/roadsafety/reg/reg\\_e.htm](http://www.tc.gc.ca/roadsafety/reg/reg_e.htm).

As Addendum tables A4-10 and A4-11 show, compared to large trucks (trucks >4,536 kilograms), private automobiles had a more noted decrease of vehicles involved in fatal collisions over the five-year period 1996 – 2000. Although pedestrian fatalities decreased from 372 in 2000 to 335 in 2001, this group accounted for the third largest share of the total (14 per cent).

## MARINE

In the marine transportation sector, the downward trend in accidents continued in 2002. A total of 483 accidents were reported last year, the lowest figure in more than 25 years. The majority of marine accidents were shipping accidents. There were 447 in 2002, 10 per cent fewer than the previous five-year average. Foreign-flag vessels were involved in 13 per cent of these shipping accidents in 2002. For more details on accidents reported to the Transportation Safety Board, see Addendum tables A4-12 to A4-14. Accidents aboard ship made up the remainder of marine accidents. The number of such accidents dropped from 59 in 2001 to 36 in 2002, and was down 45 per cent from the five-year average (65).

At the regional level, Addendum Table A4-13 shows that the largest decline in 2002 was recorded on the Pacific Coast, where shipping accidents (139) were 20 per cent below the five-year average.

TABLE 4-2: MARINE OCCURRENCES, 2001 AND 2002

	2002	2001	1997 – 2001 Average
Total Marine accidents	483	517	559
Shipping accidents	447	458	494
Accidents aboard ship	36	59	65
Vessels involved	481	506	538
Canadian-flag	422	429	453
Foreign-flag	59	77	86
Fatalities	26	34	33
Injuries	75	70	82
Reportable incidents	172	239	197

Source: Transportation Safety Board

**Canadian-flag vessels** — The number of Canadian vessels involved in shipping accidents was down by two per cent in 2002 from 2001 and by seven per cent from the five-year average. By vessel category, fishing vessels represented the largest proportion of marine accidents, with 55 per cent. Commercial vessels accounted for 33 per cent of Canadian vessel involvement. The commercial accident rate, based on vessel-kilometres and commercial vessels ≥15 gross registered tonnage (GRT), increased from 15.6 in 2001 to 16.5 in 2002.

**Marine Fatalities** — There were 15 fatal marine accidents involving Canadian- or foreign-flag vessels in 2002, with 26 lives lost. This represents a 21 per cent decrease from the five-year average. Marine injuries totalled 75 in 2002, an increase of seven per cent from 2001 but down nine per cent from the five-year average. A record low in the number of confirmed vessel losses was recorded in 2002 (25), half the number reported in 2001 (51) and observed, on average, over the last five years (48.4).

**International** — As a member of the International Maritime Organization, Canada is required to report casualties for large commercial vessels. In 2002, the Transportation Safety Board recorded no “very serious” casualties (e.g. loss of life, total vessel loss, severe pollution) involving Canadian vessels. There were four such accidents recorded in the 1997 – 2001 period. There were two Canadian-vessel “serious” casualties (e.g. main engine failure or damage rendering the ship unable to proceed, pollution) in 2002, down from the previous five-year average of six. Canada is also a signatory to two Memoranda of Understanding (MOU) on Port State Control. Under these MOUs, 1,159 foreign-flag vessels were inspected in 2002, resulting in 49 vessels being detained. As a result of improved targetting of ships, the number of substandard ships trading in Canadian ports has decreased. For more information on how Canada compares internationally, visit [www.parismou.org](http://www.parismou.org), [www.tokyo-mou.org](http://www.tokyo-mou.org) and [www.imo.org](http://www.imo.org).



*Small Commercial Vessels* — In 2002, small vessels ( $\leq 150$  GRT) engaged in commercial operations, excluding fishing, represented 12 per cent of Canadian vessels involved (54) in shipping accidents. Of these, 30 were engaged in passenger/charter activities. As a result of recent fatal accidents involving passenger vessels, Transport Canada has focussed additional safety efforts on small commercial vessels, particularly vessels  $< 15$  GRT carrying 12 or fewer passengers. Amendments to the existing regulations that require passenger safety briefings and life saving equipment were implemented in 2002. Recent improvements to the safety regime for these vessels include: inspector training to increase quality and consistency; a first and spot inspections system to improve compliance with safety requirements; and a checklist and electronic database to record inspections, operator training, and passenger awareness.

*Small Fishing Vessels* — Despite changes in the fishing industry, including moratoriums, small vessels engaged in commercial fishing activity continue to represent approximately half of Canadian vessel involvement and account for the majority of marine fatalities. In 2002, as in previous years, the majority of accidents for these vessels involved grounding (65), followed by flooding (38). Sixteen small fishing vessels were confirmed lost in 2002; although this figure is down from the five-year average, it still represents the largest proportion of total losses reported. For more details, see Addendum Table A4-14.

*Pollution accidents* — The issues surrounding coastal waters have gained increased concern in light of the *Prestige* shipping disaster off the coast of Spain in 2002. Transport Canada is committed to phasing out single-hulled tankers by 2015 in concert with international standards and U.S. requirements.

The above three initiatives are part of the regulatory reform project under the new *Canada Shipping Act 2001* (CSA 2001 received Royal Assent on November 1, 2001). For more information on regulatory and safety regime improvements for these initiatives, visit [www.tc.gc.ca/marine/menu.htm](http://www.tc.gc.ca/marine/menu.htm). For occurrence information on recreational boating and related regulatory initiatives, visit [www.redcross.ca](http://www.redcross.ca) and [www.ccg-gcc.gc.ca](http://www.ccg-gcc.gc.ca).

## AVIATION

Air accident figures in 2002 continued a general downward trend and represented the lowest annual number of accidents, including fatalities, involving Canadian-registered aircraft in the last 25 years. The number of accidents involving aircraft decreased eight per cent (from 295 in 2001 to 273 in 2002) and more

markedly by 20 per cent from the 1997 – 2001 five-year average of 339.6. There were five fewer fatal accidents in 2002 than in 2001 (28 versus 33) and 14 fewer fatalities (47 versus 61). Over the previous five-year average, there was a greater decrease in fatal accidents (34.4) and in fatalities (70.6). The number of serious injuries increased slightly, from 37 in 2001 to 42 in 2002, but remained below the five-year average of 50. This section presents the Canadian-registered aircraft accidents only; for more details, please see Addendum Table A4-15.

As Addendum Table A4-16 shows, the 2002 aeroplane accident rates by hours flown, itinerant movements and the number of Canadian-registered aeroplanes all confirm about the same rates or decreasing rates compared with 2001 and the previous five-year average. Addendum tables A4-17A and A4-17B provide a breakdown by province of aviation accidents, fatal accidents and fatalities.

Canada's vastness means that both its airspace and aviation community are among the largest in the world. Canadians rely heavily on air transportation to move people and goods safely and securely. With the predicted increases in traffic (expected to double globally in the next 15 years), the challenge for civil aviation authorities will be to find innovative ways to lower the accident rate even further and maintain high public confidence in the safety of the aviation system.

*Flight 2005* — Transport Canada is continuing its strong partnership approach to ensure that a solid foundation is established with the aviation community and the Canadian public for achieving Flight 2005 safety targets. Recently, changes have been made to the safety indicators and targets table contained in Flight 2005 in order to establish a consistent data source for tracking progress. For a broad overview of the safety initiatives under way in support of Flight 2005 goals, visit [www.tc.gc.ca/CivilAviation/Flight2005/Status/Menu.htm](http://www.tc.gc.ca/CivilAviation/Flight2005/Status/Menu.htm).

Two of the key targets of Flight 2005 relate to airlines and commuter aircraft. The year 2002 was a safe one for airlines and commuter aircraft, with no fatal accidents and few reported accidents. There were six accidents for both airlines and commuter aircraft in 2002, which is below the five-year average. The 2002 accident rates for airliners and commuter aircraft (0.5 and 1.9 per 100,000 hours flown, respectively) confirm consistent to or a decreasing trend over that of the previous years.

A further target area pertains to the combined Private/Other aircraft operations. This sector accounted for 67 per cent of all airplane accidents in 2002 and 58 per cent of the 1997 – 2001 five-year average. Accidents involving the Private/Other category decreased

by 17 per cent in 2002 and by 14 per cent over the previous five-year average. In addition, there were four fewer fatal accidents in this category than in 2001. Flight training is included as part of this category of air operations; on average, it accounted for 20 to 25 per cent of all airplane accidents between 1997 and 2001. The accident rates for the aerial work sector decreased in 2002 (11.2 per 100,000 hours compared with 18.5 in 2001) but remained one of the highest among the aircraft sectors.

In 2002, there were 864 reported incidents in total. Incidents refer to those occurrences that did not result in an accident but in which there is an identified potential for an accident to occur. The Declared Emergencies category (requiring priority handling by air traffic control or standby by emergency response services) continued to represent the largest share (32 per cent) of this total, followed by the Risk of Collision / Loss of Separation (23 per cent).

*Safety Management Systems (SMS)* — Implementing safety management systems into aviation organizations is seen as the cornerstone for improving the safety and economic performance of the aviation industry. In support of the regulatory initiatives under way, advisory material has been published highlighting what is involved in implementing SMS. Civil Aviation has also embarked on an education campaign, which is an integral part of preparing to expand SMS applicability throughout the industry.

For more information on Flight 2005 and SMS, visit [www.tc.gc.ca/CivilAviation/menu.htm](http://www.tc.gc.ca/CivilAviation/menu.htm).

## TRANSPORTATION OF DANGEROUS GOODS

In 2002, there were 580 reportable accidents involving the transportation of dangerous goods, up from 436 in 2001. Few accidents involving dangerous goods are actually caused by the goods themselves. Most often, they are caused by other factors such as weather conditions. Of the 580 reportable accidents, dangerous goods caused only two. Most reportable accidents involving dangerous goods do not occur during transport but rather during the handling process or prior to loading or unloading.

The increase in reportable accidents in 2002 may be attributed partly to an improved awareness of the related requirements, including changes to the accident-reporting requirements in the Clear Language version of the Transportation of Dangerous Goods (TDG) Regulations, which came into force on August 15, 2002.

There are approximately 27 million shipments of dangerous goods in Canada every year that are subject to TDG regulations. Almost all (99.99 per cent) arrive safely at their destinations. Among the four modes of transport, 93 per cent of dangerous goods are shipped by road, and, therefore, most reportable accidents (90 per cent) occur in this mode. For details on the number of reportable accidents by mode of transport and those accidents resulting in fatalities and injuries, see Addendum tables A4-18 to A4-20.

The majority of deaths and injuries involving the transportation of dangerous goods were caused by the accident (a collision) itself, not the dangerous goods. In 2002, 18 fatalities and 107 injuries resulted from accidents involving dangerous goods. Of these, one death and 43 injuries resulted from the dangerous goods themselves.

*Dangerous goods tanks and cylinders in fire* — Accident data indicated that pressurized tank failures in fires involving dangerous goods resulted in fatalities, prompting Transport Canada to undertake research in this area. In October 2002, Transport Canada sponsored an International Symposium on the Protection of Dangerous Goods Tanks and Cylinders in Fire to exchange information and results from research.

*International harmonization* — Transport Canada continues to harmonize regulatory requirements with other jurisdictions. Through participation in NAFTA-related initiatives, Canada proposed the establishment of harmonized North American Model Standards for highway and rail tank cars. Agreement has been reached to undertake such work for both the manufacture and use of rail and truck tanks, with Canada leading the work on rail tanks. Such work is important for the prevention of accidental releases of dangerous goods.

*Highway tank safety standards* — A Transport Canada study (TP#13678E) of accidents involving dangerous goods vehicles indicated that 83 per cent of vehicle rollovers involved tank trucks. Transport Canada has introduced a program to test the stability of different trucks and to collect data for enhancing highway tank safety standards.

For more information on these initiatives, including the new Clear Language version of the TDG Regulations, visit [www.tc.gc.ca/tdg/menu.htm](http://www.tc.gc.ca/tdg/menu.htm).

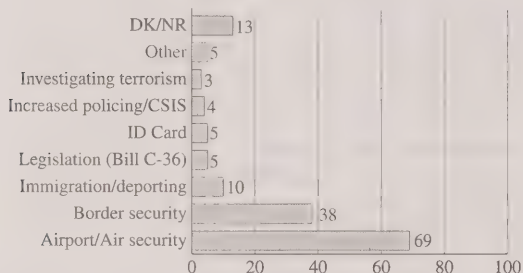
## TRANSPORTATION SECURITY

### INTRODUCTION

The events of September 11, 2001, fundamentally changed how transportation security is viewed and delivered in all modes of transportation. During 2002, Transport Canada introduced new security initiatives and continued to implement security enhancements announced in 2001, following the terrorist attacks in the United States. As Figure 4-1 illustrates, a majority of Canadians feel a high level of confidence in the safety and security of the transportation modes. This is in part due to a high level of awareness of security initiatives. Figure 4-4 shows the level of awareness of various security initiatives undertaken by the Government of Canada.

**FIGURE 4-4: SECURITY ACTIVITIES RECALLED AND MOST AWARE OF BY CANADIANS**

*(If aware) What activities have the Government of Canada taken to improve public security?*



DK/NR = Do not know/No response  
CSIS = Canadian Security Intelligence Service

Source: EKOS Research Associates

### ENHANCING TRANSPORTATION SECURITY — 2002 INITIATIVES

During 2002, Transport Canada introduced a number of comprehensive measures to strengthen the security of the national transportation system. Transport Canada worked in collaboration with other government departments and industry stakeholders to introduce and implement many new security initiatives in addition to the already rigorous security standards, policies and processes in all modes of transportation and in the transportation of dangerous goods.

#### Aviation Security

In 2002, Transport Canada introduced a number of initiatives to further enhance the safety and security of aviation. As part of these initiatives, the federal government created the Canadian Air Transport Security Authority (CATSA) in April 1, 2002, to further enhance aviation security. In 2002, the CATSA assumed responsibility for key aviation security services, including:

- Pre-board screening at 89 designated airports.
- Contracting with existing screening providers and providing upgraded training to 3,000 existing screening officers.
- Initiating a progressive program for selecting, training and certifying new screening officers to continue to uphold the delivery of consistent, effective and highly professional service at or above the standards set by the federal government.
- Taking responsibility for the deployment and lifecycle management of the Explosives Detections Systems (EDS) program. As announced in December 2001, the federal government committed \$1 billion over five years for the purchase, deployment and maintenance of explosive detection systems at Canadian airports.

During 2002, Transport Canada also implemented legislative and regulatory amendments. The *Public Safety Act* was introduced to prevent terrorist attacks, respond quickly to significant threats, and clarify and update aviation security authorities. Also in 2002, security-related amendments to the *Aeronautics Act* allowed passengers and crew information to be sent directly from an air carrier to a foreign state for security purposes. Transport Canada also participated in and contributed to the *Anti-Terrorism Act*, which amends the Criminal Code and other Acts to combat terrorism. Transport Canada also announced new regulations to aviation security that mandated the installation of internal locking devices to flight compartment doors by May 1, 2002, and new intrusion resistance requirements by April 2003.

Further enhancements include:

- Allocating \$3 million for additional security inspectors to increase inspection, monitoring and testing of the air transport security system and to oversee and enhance security requirements nationally.
- Increasing Transport Canada's capacity to identify potential threats and the means to address them through strengthened intelligence networks with other departments, additional analysts, and more advanced communications and related technologies.



## Marine Security

Key initiatives implemented in 2002 include:

- The St. Lawrence Seaway and Great Lakes Initiative, through which Canada and the United States agreed to implement enhanced security-screening procedures for ships in these waterways. As part of this agreement, the two countries share information and have increased security boardings on foreign commercial ships entering the St. Lawrence Seaway and the Great Lakes.
- Enhancements to boarding protocols, which have been refined to improve response to any threats before ships arrive at ports. As such, arrival notification for vessels entering Canadian waters has been increased from 24 to 96 hours.

Key departments and agencies working with Transport Canada on marine initiatives include:

- Canada Customs and Revenue Agency (CCRA)
- Citizenship and Immigration Canada (CIC)
- Canadian Security and Intelligence Service (CSIS)
- Canadian Coast Guard (CCG)
- Department of National Defence (DND)
- Royal Canadian Mounted Police (RCMP)
- Solicitor General

During 2002, Transport Canada, in consultation with port facilities, operators, associations and other government departments, identified further enhancements to marine security. As a result, in January 2003, the Government of Canada announced several new initiatives, such as:

- increasing surveillance and tracking of marine traffic, including near real-time identification and tracking of vessels in Canadian waters;
- screening passengers and crew on board vessels;
- installing new detection equipment in ports to screen containers for radiation;
- providing new funding to enhance the RCMP Emergency Response Teams and establish permanent investigator positions at major ports;
- enhancing collaboration and coordination among government departments and agencies;
- making further improvements to port security by establishing restricted areas and requiring people working within these areas to undergo thorough background checks;

- developing and implementing new security requirements in line with recent IMO recommendations;
- participating in the International Convention for the Safety of Life at Sea (SOLAS) and the International Ship and Port Facility Security (ISPS) Code; and
- drafting a Code of Practice, by the International Labour Organization (ILO), which covers security in port areas not covered by the IMO's ISPS Code through the ILO Maritime Security Group.

## Surface Transportation Security

In terms of road transportation security within Canada, Transport Canada formed the National Road Security Team (NRST), which includes the Canadian Trucking Alliance and the provinces. The NRST was organized to address security issues related to infrastructure, drivers, vehicles, liaison bridge and tunnel operators, and coordinated federal involvement related to border delays. The NRST reviews security issues with its U.S. counterparts, and is involved in the development of a strategy for strengthening driver's licence security identification.

Additionally, Canada and the United States signed the Smart Border Declaration to serve as a framework for dispositions to secure the flow of people, goods and infrastructure and exchange enforcement information. During 2002, progress and enhancements of this initiative have included the Canadian-U.S. joint agreement on detailed bi-national workplans to protect shared critical infrastructure in the energy, telecommunications and transportation sectors.

## Transportation of Dangerous Goods

New and enhanced security initiatives were launched in 2002 relevant to the transportation of dangerous goods (TDG), including the development of the Chemical Biological Radiological and Nuclear (CBRN) Initiative. The intent of this program is to secure access to trained industrial emergency response teams capable of providing CBRN product-related assistance to first responders in the event of a terrorist incident involving dangerous goods and other CBRN agents.

## GOING FORWARD

In maintaining the integrity of the national transportation system, Transport Canada regularly monitors the security of the system and will take immediate action if warranted. Transport Canada will continue to work with government, industry and other stakeholders to implement new security initiatives and those introduced since September 11, 2001, in all modes of transportation, the transportation of dangerous goods, and critical infrastructure protection



## Aviation

Transport Canada will continue strengthening Canada's aviation security regulatory regime, including the development of performance standards for explosives detection systems. Transport Canada will work with the CATSA and other stakeholders to develop and implement an enhanced restricted area pass system and an expanded program for screening non-passengers who require access to restricted areas at airports. Additionally, Transport Canada will enhance its consultation process for soliciting input from key stakeholders to include a more structured approach to planning and developing enhancements to aviation security while maintaining the ability to move immediately to respond to threats where such action is warranted.

## Marine

Transport Canada will continue to implement those initiatives introduced in 2002 affecting marine security. In the upcoming years, Transport Canada will undertake further initiatives in this area, including:

- amending the marine security regulatory framework in order to comply with the new marine security requirements under SOLAS and the ISPS Code;
- implementing a new Marine Facilities Restricted Area Access Program for workers at key marine facilities; and
- establishing a Marine Security Oversight and Enforcement Program.

## Surface

As part of its ongoing efforts to enhance surface transportation security, Transport Canada will continue to work with industry and other stakeholders to initiate and improve security features in this area. This will include reflecting Canada's perspective and the realities of transborder trade with the United States, through the assessment of security requirements in rail and trucking.

## Transportation of Dangerous Goods

The transportation of dangerous goods will continue to be a vital issue relevant to transportation security, particularly in light of the incidents of September 11, 2001. In the coming year and as part of its planning process, Transport Canada will continue with the development of the CBRN Response Initiative, including integrating this initiative into the National Counter-Terrorism Plan.

## Critical Infrastructure Protection

Canada and Canadians depend on a network of physical and computer-based infrastructures that provide essential energy, transportation and communications, as well as safety, financial, health and emergency response services. These infrastructures — collectively referred to as National Critical Infrastructure, or NCI — are critical to the health, safety, security and economic well-being of Canadians and to the effective functioning of governments. NCI includes physical structures (bridges, canals and pipelines) and information technology-based networks and services (in the financial, telecommunications and energy sectors, for example).

The Government of Canada, through the Office of Critical Infrastructure Protection and Emergency Preparedness (OCIEPP) is initiating the National Critical Infrastructure Assurance Program (NCIAP). Transport Canada will contribute to the development of the NCIAP in order to help protect Canada's key transportation facilities, services, assets and information.

# TRANSPORTATION AND THE ENVIRONMENT

# 5

*Canada's Climate Change Action Plan is targeting vehicles and fuels that produce fewer emissions, increasing the use of alternative modes of transportation for passenger travel, and improving the efficiency of the transportation of goods.*

The transportation sector has both positive and negative impacts on modern society. The challenge transportation faces is to increase mobility while minimizing the negative effects on the environment. Such environmental effects include climate change, smog and acid rain.

This chapter first examines the trends and pressure points facing the transportation sector and explores them in more detail in relation to the issues of climate change, including actions proposed by all levels of government to address gas emissions from transportation.

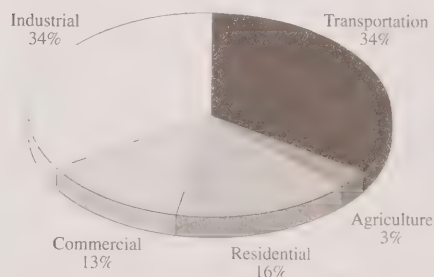
## ENVIRONMENTAL IMPACTS OF TRANSPORTATION

### OVERVIEW

Climate change is caused by active compounds (commonly called greenhouse gases, or "GHGs") that trap heat reflected from the surface of the planet in the lower atmosphere. The primary GHG is carbon dioxide. It is responsible for about two thirds of anthropogenic (human-induced) climate change. GHG emissions from the transportation sector are acknowledged as one of the major contributors to climate change.

Figure 5-1 shows that in 2000, GHG emissions from Canada's transportation's sector accounted for 34 per cent (163.4 megatonnes) of total emissions from secondary energy use. This means that this sector is the single largest source of GHGs in Canada. Of total transportation-related GHG emissions in 2000, road transportation accounted for almost 77 per cent, the aviation sector 10.3 per cent, and rail and marine combined for less than 9.5 per cent.<sup>1</sup>

**FIGURE 5-1: GHG EMISSIONS FROM SECONDARY ENERGY USE IN CANADA, 2000**



Source: Natural Resources Canada, Energy Efficiency Trends Summary Tables (Canada). OEI Web site

The use of fossil fuels in the transportation sector also contributes to other environmental concerns. For more information on energy consumption and prices in the transportation sector, see tables A2-48 to A2-60 in the Addendum. In some of Canada's most densely populated centres, smog is a major health concern. The two main ingredients of smog are ground-level ozone, which is composed primarily of nitrogen oxides ( $\text{NO}_x$ ) and volatile organic compounds (VOC), and fine airborne particles. The transportation sector is a major emitter of most of these pollutants, accounting for roughly 20 per cent of Canada's VOC emissions and more than 50 per cent of  $\text{NO}_x$  emissions. The sector also emits significant levels of fine particulates. In addition to smog, the transportation sector contributes to acid rain, primarily due to its high levels of  $\text{NO}_x$  emissions. Sulphur dioxide ( $\text{SO}_2$ ), the other primary contributor to acid rain, is emitted in relatively small quantities by the transportation sector.

<sup>1</sup> Transportation emissions accounted for a smaller share (25 per cent) of total GHG emissions from all sources of energy (primary energy), which include emissions from final end use, non-combustion use of energy, electricity generation, and oil and gas production.

Other transportation-related environmental concerns include water and noise pollution, as well as the impact on land use and urban design. Urban congestion affects the competitiveness of the Canadian economy and has an impact on the quality of life of many Canadians. It also results in higher fuel consumption and additional emissions of air pollutants and GHGs, and it aggravates human health problems such as stress and asthma. Other activities, such as the construction of transportation infrastructure and related operation and maintenance activities, affect the environment. Another recognized environmental pressure coming from the transportation sector is the combined life-cycle of transportation vehicles from construction and operation through to final disposal. The transportation and distribution of fuel and its impact on air and land pollution could also be added to this list.

## TRENDS IN TRANSPORT — PRESSURE POINTS

The main long-term pressures that will confront the transportation sector are similar to those that affect other sectors — namely, an increasing population and economic growth. Canada's current population of just over 31 million is expected to grow by roughly 2.8 million by 2010.

While international trade has always been particularly important to Canada's economy, its importance has increased rapidly in recent years. This is especially true of trade with the United States. Increased trade has a direct effect on transportation energy use, and consequently on emissions, as the shipment of goods increases the demand for transportation.

Figures 5-2 to 5-6 show recent trends in emissions of GHGs from the main types of transport fuels from 1980 to 2001. Some important qualifications to these figures should be noted, in relation to those used for the national inventory of GHGs prepared by Environment Canada, which follow the international reporting guidelines developed by the Intergovernmental Panel on Climate Change (IPCC, 1997) for the allocation of fuels to countries and sectors.<sup>2</sup>

These figures demonstrate that trends in GHG emissions over the past two decades have differed substantially among the fuels. The causes of these trends are not easily identified but some interpretation can be based on developments in traffic and vehicle technology. Aggregate consumption of any fuel is a product of traffic (vehicle-kilometres and loads) and the fuel efficiency of the vehicles (litres consumed per vehicle-kilometre). Both factors have changed substantially over this period and are different for the different fuels.

As Figure 5-2 shows, GHG emissions from road gasoline fell in aggregate during most of the period, surpassing their 1980 level only in 1999. In 2001, emissions were only about four per cent higher than in 1980, despite substantial growth in the vehicle fleet and its usage. This reflects the unprecedented improvements in fuel consumption per vehicle-kilometre by cars and light trucks, as federal standards took effect in North America.

As Figure 5-3 shows, GHG emissions from road diesel grew substantially over this period and were 130 per cent higher in 2001 than in 1980. Fuel efficiency of new trucks improved impressively through the period. Trucking itself, however, grew substantially faster in response to economic growth (interrupted only briefly by a recession in the early 1990s), liberalized North American trade, the "just-in-time" revolution and deregulation in the trucking market.

Figure 5-4 shows that GHG emissions also grew by 26 per cent in aviation over this period. This growth was not consistent, as most of it occurred only in the latter half of the 1990s, when passenger traffic in transborder services expanded particularly fast. Fuel efficiency (consumption per passenger-kilometre) improved over the period due to technical improvements in new aircraft, a shift from smaller to larger aircraft and increased load factors.

Figure 5-5 shows an overall reduction in rail GHG emissions of about 13 per cent from 1980 to 2001. This occurred despite traffic (in domestic tonne-kilometres) growing by more than one-third, reflecting a substantial improvement in technology and operations.

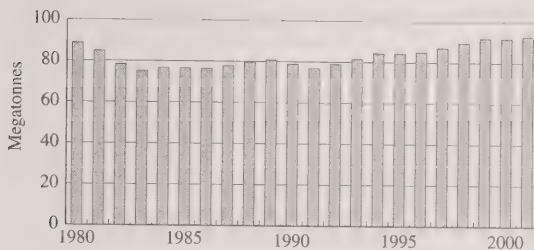
2 For motor vehicle gasoline and diesel, the figures used in this report are for fuels used on the public networks (and therefore taxed at road use rates), excluding all fuels used off-network, such as in farm, forestry and mining operations. For aviation and marine fuels, the figures include all types of fuel (i.e. aviation gasoline as well as turbo fuel, marine gasoline and diesel, and light or heavy fuel oil) and all fuels sold in Canada, whether to domestic or foreign operators. Emissions are expressed in CO<sub>2</sub>-equivalents, calculated from sales of each type of fuel combined with rates per unit of fuel for emissions of CO<sub>2</sub>, NO<sub>2</sub> and methane. Rates for the latter two gases differ slightly by year, due to differences in emission control equipment, but CO<sub>2</sub> emission rates are overwhelmingly dominant and are constant for each type of fuel.



Figure 5-6 shows an overall reduction in marine GHG emissions of 18 per cent between 1980 and 2001, largely reflecting a contraction in marine traffic.

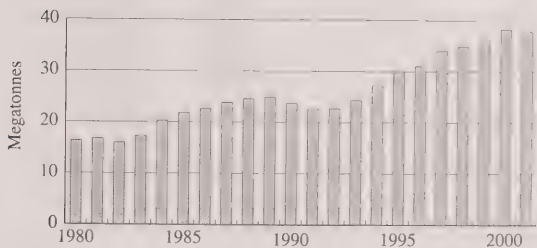
The historical trends observed between 1980 and 2001 are expected to persist in the near future. By 2020, total transportation demand could be more than 50 per cent higher than it was in 1990, with most of the growth expected to come from private vehicles, trucking and aviation. This has the potential to offset overall reductions associated with technological improvements in private vehicle emissions achieved between 1980 and 1990. This is especially true because much of this increase in demand is for larger personal vehicles such as sport utility vehicles (SUVs) and minivans.

**FIGURE 5-2: ROAD GASOLINE GHG EMISSIONS 1980 – 2001**



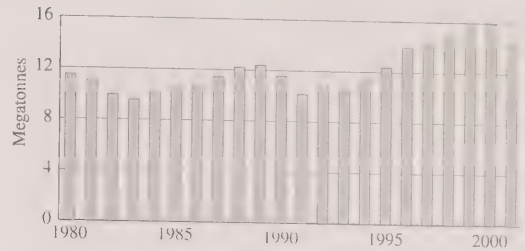
Source: Fuel sales from Statistics Canada: Quarterly Report on Energy Supply-Demand, Cat. 57-003; conversion factors to GHG emissions from Environment Canada: Canada's Greenhouse Gas Inventory 1990-2000, June 2002

**FIGURE 5-3: ROAD DIESEL GHG EMISSIONS, 1980 – 2001**



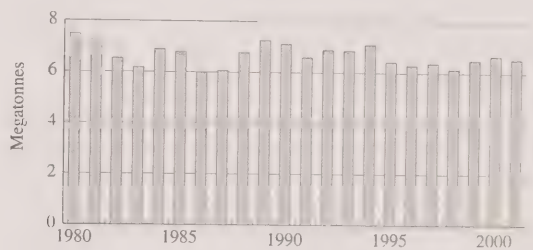
Source: Fuel sales from Statistics Canada: Quarterly Report on Energy Supply-Demand, Cat. 57-003; conversion factors to GHG emissions from Environment Canada: Canada's Greenhouse Gas Inventory 1990-2000, June 2002

**FIGURE 5-4: AVIATION FUEL GHG EMISSIONS, 1980 – 2001**



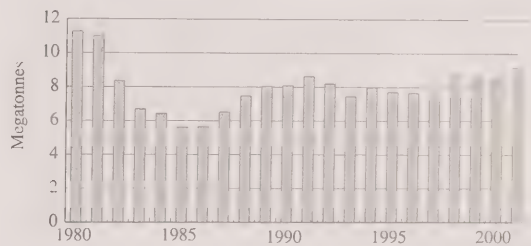
Source: Fuel sales from Statistics Canada: Quarterly Report on Energy Supply-Demand, Cat. 57-003; conversion factors to GHG emissions from Environment Canada: Canada's Greenhouse Gas Inventory 1990-2000, June 2002

**FIGURE 5-5: RAIL DIESEL GHG EMISSIONS, 1980 – 2001**



Source: Fuel sales from Statistics Canada: Quarterly Report on Energy Supply-Demand, Cat. 57-003; conversion factors to GHG emissions from Environment Canada: Canada's Greenhouse Gas Inventory 1990-2000, June 2002

**FIGURE 5-6: MARINE FUEL GHG EMISSIONS, 1980 – 2001**



Source: Fuel sales from Statistics Canada: Quarterly Report on Energy Supply-Demand, Cat. 57-003; conversion factors to GHG emissions from Environment Canada: Canada's Greenhouse Gas Inventory 1990-2000, June 2002



## THE GOVERNMENT OF CANADA CLIMATE CHANGE AGENDA

In December 1997, signatory countries to the Framework Convention on Climate Change met in Kyoto, Japan, and negotiated commitments to reduce GHG emissions from industrialized countries in the post-2000 period. The Kyoto Protocol, which is subject to ratification, calls on industrialized countries to reduce their collective emissions of the principal greenhouse gases by 5.2 per cent from 1990 levels over a five-year period beginning in 2008. Different countries have different targets. Canada's target is to reduce emissions by six per cent from 1990 levels (240 megatonnes).

First Ministers tasked federal, provincial and territorial Ministers of Energy and Environment to develop a national process to examine the consequences of the Kyoto Protocol and provide for full participation of all levels of government.

In 1998, the Minister of Transport and his provincial and territorial colleagues co-sponsored a multi-stakeholder Transportation Climate Change Roundtable. This Roundtable, which was co-chaired by Transport Canada, evaluated more than 120 potential measures to reduce GHG emissions from transportation. The Roundtable stressed that there is no "silver bullet" in transportation and that an integrated strategy balancing technology, behavioural change and infrastructure investment would be needed.

The analysis of the Transportation Climate Change Roundtable was integrated into a national process that assessed the overall impacts of ratifying the Kyoto Protocol. The analysis provided a set of promising measures, or initiatives, that were inexpensive and could be undertaken fairly rapidly. Several of these measures were adopted as part of the Government of Canada's Action Plan on Climate Change announced in October 2000 (see text box Action Plan 2000: An Update, on page 37).

Transport Canada has adopted a share of this target based on the emissions baseline of its own operations. The target is a four per cent reduction from Transport Canada's 1998/99 GHG baseline by 2008/12. Transport Canada's GHG emissions reduction strategy will mainly target its motor vehicle fleet with alternative fuel purchasing and the marine vessel fleet with efficiency improvements.

Since the baseline year of 1998/99, Transport Canada has reduced its GHG emissions, in all sectors except for marine, by an overall 18 per cent. However, these reductions are mainly due to Transport Canada's divestiture program. Transport Canada's emission baseline will be addressed to remove the impact of such divestitures once an accepted methodology is in place.

Table 5-1 shows levels of GHG emissions from Transport Canada activities since 1998/99, while Figure 5-7 shows the changes in these emissions from the baseline year to 2001/02.

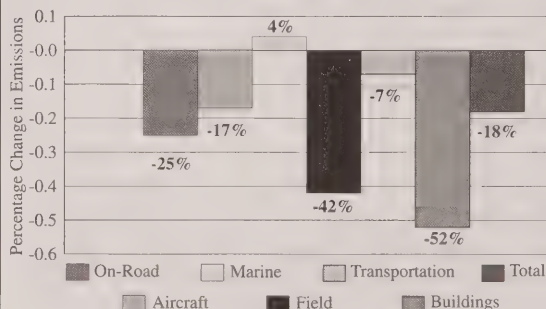
**TABLE 5-1: EMISSIONS FROM TRANSPORT CANADA ACTIVITIES,<sup>1</sup> 1998/99 – 2001/02**

(Tonnes of CO <sub>2</sub> equivalent)				
Category	1998/99	1999/2000	2000/01	2001/02
On-Road	2,583	3,107	2,048	1,942
Aircraft	14,768	13,207	13,207	12,302
Marine	43,552	43,194	44,400	45,235
Field	7,677	10,706	6,605	4,490
<b>Total</b>	<b>68,580</b>	<b>70,214</b>	<b>66,260</b>	<b>63,969</b>
Transportation	68,580	70,214	66,260	63,969
Buildings	23,600	21,400	11,700	11,400
<b>Subtotal</b>	<b>92,180</b>	<b>91,614</b>	<b>77,960</b>	<b>75,369</b>

<sup>1</sup> The level of emissions from transportation for all years has increased considerably, since last year's annual report, due to the inclusion of three marine vessels that were not previously accounted for.

Source: Transport Canada

**FIGURE 5-7: EMISSION TRENDS IN TRANSPORT CANADA ACTIVITIES, 1998/99 – 2001/02**



Note: 1998/99 is the baseline year for Federal House in Order.

Source: Federal House in Order, Greenhouse Gas Inventory 2001 – 2002, Transport Canada, Environmental Affairs, January 2003.

In May 2002, the federal government released *A Discussion Paper on Canadian Contribution to Addressing Climate Change*. Options outlined in the paper reflected varying degrees of effort in the transport sector to reduce GHG emissions.

In June 2002, a series of stakeholder workshops were held in 14 cities to gather feedback on the discussion paper. Transportation stakeholders from across Canada participated in these consultations.

On November 21, 2002, the Government of Canada released the Climate Change Plan for Canada and tabled the detailed plan in Parliament. The Plan outlined how Canada can meet its emission reduction target under the Kyoto Protocol. On December 17, 2002, Canada ratified the Kyoto Protocol at the United Nations in New York.

The Plan sets out a three-step approach to achieving Canada's climate change target under the Kyoto Protocol of reducing annual GHG emissions by 240 megatonnes (MT). First, investments to date under Action Plan 2000 are expected to address one third of the total reduction target (80 MT). Second, the Plan articulates a strategy for a further 100 MT reduction through actions in the following three priority areas: 1) actions by Canadians and governments in the transportation and building sectors; 2) reductions of emissions by large industry, through a comprehensive approach that includes targets established under covenants domestic emissions trading (with access to domestic offsets, and the international carbon market) and strategic investments in renewable energy, technology and infrastructure; and 3) government purchases of permits in the international market. Together, the actions already under way and those proposed in the Plan are expected to address 180 MT of our 240 MT target. The Plan outlines a number of current and potential actions that could enable Canada to address the remaining 60 MT reductions.

Transportation is a significant component of the Climate Change Plan for Canada with 21 MT of potential reductions identified from existing and new measures in this sector. It is clear that this sector is being counted on to deliver a considerable portion of Canada's GHG emission reductions (see text box on Climate Change Plan for Canada on page 38).

The Plan builds on the solid foundation that was established by the five transportation programs in Action Plan 2000 on Climate Change. An overview of proposed new transportation measures in the Climate Change Plan for Canada follows.

## EFFICIENT VEHICLES

The Government of Canada will continue its initiative to improve new vehicle fuel efficiency by 25 per cent by 2010. It will also work to improve markets for new, more efficient vehicles. This effort will involve new campaigns aimed at giving consumers better information on the fuel efficiency and "carbon burden" of vehicles in the market. These efforts could also reduce the emissions of vehicles currently on the road by encouraging consumers to better maintain their vehicles and use them in a more fuel-efficient manner.

## LESS GHG-INTENSIVE FUELS

When blended with gasoline at low levels (such as 10 per cent), ethanol can reduce the amount of GHGs produced by that gasoline. Most vehicles in Canada today can safely operate on ethanol-blended gasoline (E10). While grain-based ethanol will play an important role in the short term, it is recognized that cellulosic ethanol is an emerging Canadian technology that holds much promise over the longer term. The Government's goal is to have 35 per cent of Canada's gasoline supply contain E10 by 2010.

Canada is also a world leader in new technologies for the production of biodiesel. Biodiesel is made from low-cost waste materials and has the potential to reduce GHG and reap clean air benefits. The plan proposes that federal, provincial and territorial governments collaborate on how to reach the target of 500 million litres produced by 2010. This focus on biodiesel technologies will develop new industries and, at the same time, address important waste management issues.

## PASSENGER TRANSPORTATION

In keeping with its commitment in the Speech from the Throne regarding modern infrastructure and a new strategy for a safe, efficient and environmentally responsible transportation system, the federal government proposes to work with provinces and territories to support projects for public transit infrastructure. This would be done in conjunction with collaborative efforts to establish supporting transportation management and land-use planning frameworks at the municipal level, and significant provincial and territorial actions to increase demand for public transit and reduce single-occupant vehicle use. Potential actions include mechanisms to give priority to public transit in traffic, and strategic management of the supply and pricing of parking facilities and roads. Municipalities can also improve infrastructure for non-motorized transportation through the creation of walking and biking paths.

## EFFICIENT FREIGHT TRANSPORTATION

Through negotiations with associations and industry, as well as new education and awareness tools, the goal outlined in Action Plan 2000 for freight efficiency improvements would be increased. Public-private collaboration to promote the use of intermodal freight opportunities and to increase the use of lower-emission vehicles and modes is sought to increase freight efficiency. This could be done through support for improvements in infrastructure; greater use of intelligent transportation systems; identification and removal of barriers to intermodal freight; harmonization of national and international standards; and showcasing of best practices and new technologies.

In recognition of its position as Canada's largest single enterprise, and to demonstrate strong leadership in addressing climate change, the federal government has committed to reduce GHG emissions from its operations by 31 per cent below 1990 levels by 2008/12. Based on business as usual practices, this target will be achieved through improvements in transportation (on-road, field equipment and marine) and reductions in building energy use.

## CLIMATE CHANGE IMPACTS

Global warming and climate change have actual and potential impacts on Canada's transportation systems. Climate and weather affect transportation operations and the planning, design, construction, maintenance and performance of transportation infrastructure and operations. For example, warmer temperatures can lead to permafrost degradation and affect the structural stability of northern transportation infrastructure. They can cause shortened ice road seasons. Increased freeze cycles add to pavement stress and rail track damage. Furthermore, changes in precipitation may increase the rate of weathering and flooding of infrastructure. Rising sea levels in coastal areas may render some transportation sites and structures vulnerable. However, impacts can also be beneficial. Examples include reduced snow removal costs or lengthened operational seasons for certain modes. To develop effective strategies, these and other climate change impacts must be assessed comprehensively by examining both regional and modal implications.

Adapting to climate change impacts means that Canadians — industries, businesses, governments and individuals — will now have to factor in other variables in their economic decisions, such as changes in weather and other climate-related effects. Such a response will determine how Canada adapts and whether Canada does so at a high or low economic cost. It is important that we improve our understanding of the potential vulnerability of the transportation system to climate change impacts.

Transport Canada has been involved in various initiatives to address climate change impacts on transportation in Canada. During 2002, work was completed on the report *Climate Change and Adaptation: A Canadian Perspective*. Support was provided to stakeholder consultations to assist in the development of a National Adaptation Framework.

The provincial, territorial and municipal governments have been addressing the challenge of climate change as well. They have developed and carried out their own programs and provided support to private-sector and non-governmental organizations projects. The following is a sample of the provincial and territorial action plans that have been published.

## OVERVIEW OF PROVINCIAL/TERRITORIAL CLIMATE CHANGE ACTION PLANS WITH TRANSPORTATION INITIATIVES

### NEW BRUNSWICK

In January 2003, the Government of New Brunswick released its discussion paper on developing a climate change action plan for the Province and launched an Internet-based public consultation process. The discussion paper is the first step to developing an action plan based on a five-pronged approach: demonstrating government leadership through energy efficiency improvements and regulations and tax treatments; enhancing awareness and understanding; stimulating new technologies and innovative approaches; investing in knowledge; and working with a wide range of partners. The discussion paper also outlines examples of possible energy efficiency measures in all sectors, including transportation.



## PRINCE EDWARD ISLAND

In September 2001, the Government of Prince Edward Island (P.E.I.) released its *First Climate Change Business Plan (2000 – 2003)*. In it, the provincial government committed to implement a number of transportation measures such as investigating intelligent transportation systems in road design, incorporating global positioning systems in highway maintenance, and continuing to promote ride-sharing programs such as P.E.I.'s Enerpool and teleworking for provincial employees.

## QUEBEC

In 2000, the Government of Quebec released its *Action Plan on Climate Change 2000–2002*. The Plan identifies seven priority areas, several of which are relevant to transportation: investing in urban transportation such as infrastructure, transit and freight/intermodal; facilitating the penetration of fuel efficient vehicles in the Quebec market; improving energy efficiency; and enhancing climate change technology research and development (R&D) (e.g. hydrogenation, biomass, solar energy, gas technologies, electro-technologies).

On October 18, 2002, the Minister of State for Municipal Affairs and Greater Montreal, the Environment and Water, André Boisclair, released Quebec's first inventory of GHG emissions, confirmed the Province's support for the Kyoto Protocol, and called for a Canada–Quebec bilateral agreement on implementation and funding for emissions reductions. On the same day, he unveiled the *Declaration of Quebec Respecting the Implementation of the Kyoto Protocol in Canada*. Quebec's National Assembly began public consultation on the implementation of the Kyoto Protocol in Quebec in February 2003. This consultation is meant to allow the Province of Quebec to develop views on how to achieve its reductions objectives.

## ONTARIO

The Province of Ontario has not released any specific climate change plans but has focused its actions and initiatives on addressing air quality issues with associated climate change objectives often considered as co-benefits. The Drive-Clean initiative is an example of an approach focusing on an air quality issue with relevant implications for climate change.

## MANITOBA

On June 19, 2002, the Province of Manitoba released the report *Kyoto and Beyond — Meeting and Exceeding Our Kyoto Targets*. The report describes some of the actions under way, including: the promotion of ethanol use and production. The report also introduced emissions targets for Manitoba of 18 per cent below 1990 levels by 2010 and 23 per cent by 2020. On October 15, 2002, the provincial government released the climate change action plan *Kyoto and Beyond — A plan of action to meet and exceed Manitoba's Kyoto targets*. The plan describes the Province's approach to meet its emission targets. It focuses on new energy developments to foster growth in wind power, geothermal energy and hydrogen research and to increase the use and production of ethanol.

## SASKATCHEWAN

On October 16, 2002, the Province of Saskatchewan released the climate change position paper *A Saskatchewan Perspective on Climate Change Policy* outlining the Province's view toward the federal plan. The paper notes many initiatives taken by Saskatchewan to reduce GHG emissions, including the introduction of the mandatory use of ethanol in gasoline. The position paper seeks support for a national ethanol policy. In June 2002, Saskatchewan passed the *Ethanol Fuel Act*, which provides a legal framework for mandating ethanol content in gasoline sold in the province. The Act will come into force when the industry is sufficiently developed. Saskatchewan will become one of the largest producers of ethanol in Canada.



## ALBERTA

In May 2002, the Province of Alberta released a draft action plan proposing an Alberta approach to address climate change and reduce GHG emissions. Following extensive consultations, Alberta released its plan in October 2002 — *Albertans and Climate change: Taking Action*, which establishes a framework to reduce GHG emissions. In the plan, the Province of Alberta committed to reduce GHG emissions intensity relative to the Gross Domestic Product (GDP) by 50 per cent below 1990 levels by 2020. The plan proposes to negotiate binding agreements with specific economic sectors (including transportation) to set measurable goals for reducing GHG emissions, purchase hybrid vehicles for the government fleet; and to implement a provincial fuel cell strategy through demonstration projects.

## NEW ENGLAND GOVERNORS AND EASTERN CANADIAN PREMIERS' CLIMATE CHANGE ACTION PLAN

The Conference of New England Governors and Eastern Canadian Premiers released their Climate Change Action Plan in 2001. The action plan presents a set of recommendations and action items, and serves as a framework for taking action on climate change. The goal of the Plan is to develop a comprehensive and coordinated regional approach to reduce GHGs to 1990 levels by 2010 and by 10 per cent below 1990 levels by 2020. At their November 22, 2002, meeting, the Council of Atlantic Premiers reconfirmed their commitment to implementing the NEGECP Action Plan. Some of the Plan's action areas are: decreased growth in GHG emissions from the transportation sector through the promotion of higher efficiency vehicles; lower carbon fuels and technologies through incentives and education; public education; management and reduction of transportation demands; enhancement of mass transit; advancement of vehicle technology; improvement of energy efficiency in freight transportation; and support for interconnected greenway and bicycle/pedestrian pathway systems.

## OVERVIEW OF MUNICIPAL INITIATIVES

An estimated two thirds of Canada's transportation-related GHG emissions are generated within urban areas. Thus, land use and transportation plans at the municipal level are important from a climate change perspective.

The Federation of Canadian Municipalities has provided funding for sustainable municipal transportation projects since 2000 through the Green Municipal Enabling Fund. The Government of Canada created the Green Funds in its 2000 Budget. Funding for direct transportation projects amounted to only five percent of the total awarded in the initial years. However, the Federation has taken steps to increase the focus on transportation by:

- expanding the transportation category beyond public transit technologies and municipal fleets to include public transit, integrated and alternative transportation, and transportation demand management;
- expanding the definition of innovation (a key criteria) to include the eligibility of innovations adopted elsewhere or in a different size of community;
- adding dedicated staff to support transportation applications; and
- allowing funding to be combined with funds from other federal sources, such as Transport Canada's Moving on Sustainable Transportation Program.

Examples of transportation projects funded across Canada in 2002 include:

- Sustainable Transportation in South East False Creek, Vancouver, British Columbia
- Public Transit Feasibility Study, Canmore, Alberta
- Rapid Transit Feasibility Study, Regional Municipality of York, Ontario
- Reducing Environmental Impacts of Truck Freight, Sherbrooke, Quebec

The Federation of Canadian Municipalities has also funded sustainability planning projects in various sized communities that examine all aspects of community systems, including transportation, and that may lead to actions that encourage sustainable transportation. The Greater Vancouver Regional District is pursuing a cities PLUS project looking at a 100-year sustainability strategy for Greater Vancouver. This project will form Canada's submission to the International Gas Union's Sustainable Urban Systems Design Competition in June 2003.

## ACTION PLAN 2000: AN UPDATE

Five elements under Action Plan 2000 on Climate Change are being implemented.

**Freight Efficiency and Technology Initiative** — This \$14 million initiative is designed to reduce the growth of greenhouse gas (GHG) emissions from freight transportation. It consists of three components: the Freight Sustainability Demonstration Program (FSDP); voluntary performance agreements between the federal government and modal industry associations; and training and awareness for freight operators and shippers. Over the course of 2002, the program has, among other things, awarded \$340,000 to four technology demonstration projects through the first round of the FSDP and hosted an international aviation workshop on operational measures for reducing fuel use and emissions.

**Canadian Transportation Fuel Cell Alliance** — This \$23 million program aims to demonstrate and evaluate different processes for the production and delivery of hydrogen to fuel cell vehicles at fuelling stations. It also addresses the development of appropriate codes and standards; conducts studies and assessments of various hydrogen production and delivery systems; and provides for related communications activities. In its second year of operation, it has, among other activities, finalized the work plans of its five working groups; initiated the development of several fuelling demonstration proposals; been instrumental in the formation of a committee to develop a Canadian Hydrogen Installation Code for hydrogen fuelling stations; initiated a special study related to the future availability of electricity for hydrogen production; and assisted with the development of an introductory short course on hydrogen and fuel cells.

**Future Fuels Initiative** — This program aims to increase the supply and use of ethanol produced from biomass such as plant fibre, corn, wheat and other grains. The program targets a fourfold increase in current ethanol production and use in Canada to about one billion litres per year by 2010. It includes a \$140 million contingent loan guarantee program and \$3 million over five years to carry out analytical research and public awareness activities. The initiative was launched in November 2001. Farm Credit Canada is administering the National Biomass Ethanol Program component of the program on behalf of Agriculture and Agri-Food Canada (AAFC). Natural Resources Canada and AAFC have consulted with feedstock suppliers, ethanol manufacturers, refiners, auto-manufacturers and governments on the barriers and opportunities regarding ethanol market expansion. Research projects are being launched in a number of areas, including the economic impacts and co-benefits of an ethanol industry. An awareness campaign is being implemented, in cooperation with industry and the provinces. Industry representatives are advancing feasibility studies and proposals for new ethanol facilities in a number of communities across Canada.

**Motor Vehicle Fuel Efficiency Initiative** — This \$16 million program aims at significantly improving the fuel efficiency of new light-duty vehicles through voluntary targets for vehicle fuel efficiency, consumer campaigns, monitoring compliance, and testing and demonstrating advanced technology vehicles. Preliminary meetings were held with automobile manufacturers during the year to outline the nature of the initiative. Natural Resources Canada sponsored a workshop on a joint study with the U.S. Department of Energy entitled *Examining the Potential for Voluntary Fuel Economy Standards in the United States and Canada*. Citizen forums on personal transportation were completed and market research activities initiated to gain a better understanding of the importance of, and barriers to, fuel efficiency in consumers' vehicle purchase and maintenance decisions. An idling project was launched in partnership with the Canadian Petroleum Products Institute and the City of Mississauga, and the Rubber Association of Canada was recruited as a partner for a national tire inflation campaign, which will be launched in the spring of 2003.

**Urban Transportation Showcase Program** — This \$40 million program encourages Canadian municipalities to adopt more energy-efficient transportation and land-use plans and practices. The program will fund at least four showcases over five years to demonstrate, evaluate and promote effective strategies to reduce GHG emissions from transportation in urban Canada. In 2002, the program awarded \$450,000 to 15 short-listed finalists to help them develop and submit a detailed proposal for implementing sustainable urban transportation strategies. An announcement on the Program's final recipients is expected in the fall of 2003. The program is also targetting learning events related to sustainable urban transportation as part of its information network.

## CLIMATE CHANGE PLAN FOR CANADA

## SUMMARY

Canada's Climate Change Plan calls for action on vehicles and fuels that produce fewer emissions, the increased use of alternative modes of transportation for passenger travel, and more efficient transportation of goods. These actions will also contribute to cleaner air and reduced traffic congestion, making our cities healthier and more sustainable.

## ACTIONS UNDER WAY (9 MEGATONNES (MT))

- Negotiations for 25 per cent improvement in new vehicle fuel efficiency by 2010 (5.2 MT)
- Increased ethanol production to support the introduction of ethanol blending in 25 per cent of the gasoline supply (0.8 MT)
- Development and demonstration of refuelling technologies and infrastructure for commercialization of fuel cell vehicles (0.1 MT)
- Demonstration of integrated strategies, technologies and planning to reduce urban transportation emissions (0.8 MT)
- Negotiation of voluntary agreements with air, rail, truck and marine sectors to improve fuel efficiency of transport of goods (2 MT)

## PROPOSED NEXT STEPS (12 MT)

- Consumer action to improve vehicle efficiency, including off-road vehicles (0.8 MT)
- Increasing the target for ethanol blending to 35 per cent of the gasoline supply and setting a target of 500 million litres of biodiesel being consumed by 2010 (2 MT)
- Increased use of public transit, alternative approaches to passenger transportation and sustainable urban planning (7 MT)
- More efficient transport of goods, including intermodal (2.3 MT)

*With minimal discontinuance of railway tracks,  
Canadian railways did relatively well in 2002,  
despite a slight reduction in rail loadings.*

## MAJOR EVENTS IN 2002

Due to a grain harvest significantly below historical levels in 2002, Canadian railways saw movements of grain drop by about 24 per cent from 2001.

The first *Grain Monitor Report* was issued in June 2002. General observations were that significant reductions in rail car cycle times were experienced, while rationalization of the elevator system continued at a high pace.

Overall traffic levels declined by almost two per cent in 2002. Rationalization activity and changes in industry structure were again minimal.

As a result of interest in ensuring border security, U.S. Customs proposed that scanning equipment be installed at each major rail border crossing point. Rail carriers expressed concerns over resulting potential border delays and operational difficulties.

## INFRASTRUCTURE

Relatively little change occurred in the structure of the Canadian rail system during 2002. A total of 290 kilometres of track was discontinued during the year: a Canadian Pacific Railway (CPR) line in Alberta, a portion of a line in Ontario owned jointly by Canadian National (CN) and CPR and a portion of a line in Saskatchewan owned by a shortline. Very few transfers occurred. The only activity was the acquisition by NB Inc. of the rail assets of Devco following its dissolution. In aggregate, the size of the Canadian rail network decreased by 0.6 per cent from 49,711 to 49,427 kilometres. This decrease was slightly greater than that experienced in the previous two years, but the relative lack of system change remains in stark contrast to the level of activity during the late 1990s.

Table 6-1 shows the distribution of trackage by key carriers and carrier groups in 2002.

As has been noted in previous annual reports, the latter half of the 1990s saw an explosive growth in the number and activity of shortlines in Canada. From modest beginnings in the late 1980s the number of shortlines formed in Canada grew slowly during the early 1990s and then quite dramatically following the enactment of the *Canada Transportation Act 1996*. Prior to 1996, 11 new

TABLE 6-1: RAILWAYS IN CANADA, 2002

	2002 Owned / Leased Route- Kilometres	2001 Owned / Leased Route- Kilometres <sup>1</sup>	Per cent of Total (2002)	Percentage Change Over Previous Year
CN Rail	18,886	19,098	38.2	(1.1)
CP Rail	13,817	13,973	28.0	(1.1)
Regional and Shortline Railways	15,875	15,795	32.1	0.5
All Others <sup>2</sup>	844	844	1.7	0.0
<b>Total</b>	<b>49,422</b>	<b>49,711</b>		<b>(0.6)</b>

1 2001 trackage revised slightly to reflect improved data.

2 Terminal and switching railways, Canadian subsidiaries of U.S. railroads and passenger railways.

Note: By definition, route-kilometres do not include parallel trackage, spurs, sidings and yard trackage.

Source: *Transport Canada*



shortlines had formed, while between 1996 and 2000, 37 new shortlines were created. Since then, however, only a few new shortlines have been created, suggesting that the sector has reached a plateau. No doubt further transfers will occur in the future, but it is unlikely that the rate of formation of the late 1990s will be repeated.

Between 1990 and 2002, approximately 9,400 kilometres of rail line were discontinued. The majority of track was discontinued more or less equally by CN and CPR. In aggregate, almost 60 per cent of all discontinuances in this period occurred in Ontario, Saskatchewan and Alberta. About 11,400 kilometres of track was transferred in this period, predominantly from CN and CPR to newly formed shortline carriers. A small amount of trackage was transferred between other carriers. Of the total amount of track transferred, about 30 per cent originated with CPR and 66 per cent with CN.

Table 6-2 shows rationalization activity in the rail sector in 2002 and from 1990 to 2002.

**TABLE 6-2: RAILWAY RATIONALIZATION IN CANADA, 2002**

		2002 Rationalization	1990 – 2002 Rationalization
Discontinuances	CPR <sup>1</sup>	156	4,255
	CN	134	4,353
	Other	35	839
	<b>Total</b>	<b>290</b>	<b>9,447</b>
Transfers	CPR		3,377
	CN	74	7,522
	Other	40	467
	<b>Total</b>	<b>114</b>	<b>11,366</b>
Total	CPR	156	7,631
	CN	208	11,875
	Other	75	1,307
	<b>Total</b>	<b>439</b>	<b>20,813</b>

<sup>1</sup> CPR lines on CASO not included to avoid double-counting.

Source: TransportCanada

The 20,813 kilometres of line rationalized since 1990 have resulted in major changes in the structure of the rail industry in Canada. While CN and CPR remain the dominant carriers (they account for 85 per cent of industry activity and revenues), they operate about two thirds of the total domestic rail network, whereas a decade ago they operated about 90 per cent of the trackage. CN acquired Wisconsin Central in 2001 and in so doing also acquired Algoma Central Railway, which was previously owned by Wisconsin Central. CN is also the leading bidder for the provincially owned Ontario Northland Railway.

Several transactions were slated to occur at the end of 2002 but were postponed until early January 2003. The Devco properties acquired by NB Inc. were to have been transferred to a subsidiary of the Quebec Railway Corporation, a company with numerous shortline railway operations in Eastern Canada. This transaction occurred

early in 2003 as did the transfer of the assets and operations of the Canadian American (CDAC), Quebec Southern (QSR) and Bangor & Aroostock (BAR) railways to the Montreal, Maine & Atlantic Railway. The parent company of the CDAC, QSR and BAR was Iron Road, a U.S.-based shortline holding company that had gone bankrupt. The E&N, a RailAmerica subsidiary operating on Vancouver Island, lost a significant proportion of its traffic base to trucking in 2001 and had indicated that it would cease operations by mid-2002. In the end, following discussions between the operator, VIA Rail, CPR and regional stakeholders, the decision was made to continue operations. The decision is pending a long-term solution for the future of rail services on Vancouver Island.

While it is expected that both CN and CPR will continue to rationalize their networks, it is likely that second-order rationalization (the rationalization of track acquired by shortline or other operators from CN or CPR) will also continue. The multiple transactions involving the properties originally owned by Devco are a case in point.

Addendum tables A6-1 and A6-2 show further detail of railway rationalization in Canada by province.

## INDUSTRY STRUCTURE

The character of the Canadian railway industry changed dramatically in the 1990s, as the number of carriers more than doubled. Despite these changes, CN and CPR continued to generate the bulk of revenues in the rail industry. Total rail industry revenues in 2001 were \$8.1 billion, of which 89.2 per cent was generated by the Class I carriers, CN, CPR and VIA Rail. This was down slightly from the 91.2 per cent share in 1990. However, revenues for the Class I carriers grew at an annual rate of 1.2 per cent over the 1990 – 2001 period. This was in contrast to the regional railways (BC Rail, Algoma Central, Ontario Northland, Cartier Railway and the Quebec North Shore & Labrador), which saw their revenues decline at a rate of 0.5 per cent per year. With the growth in the shortline sector, there was also significant growth in this sector's revenues, from about \$95 million in 1990 to about \$385 million in 2001, an annual growth rate of 13.5 per cent. This growth rate translated into a relative increase in the shortline sector's proportion of rail industry revenues from 1.4 to 4.7 per cent.

Table 6-3 compares revenues in the railway sector in 2000 and 2001. Addendum Table A6-3 shows revenues since 1990.

VIA Rail continues to dominate the intercity rail passenger sector, with about 95 per cent of total passenger revenues. The balance of intercity rail passenger services is provided by Algoma Central, Ontario Northland and the Quebec North Shore & Labrador. During the latter part of 2002, BC Rail ceased to offer passenger services. It will continue to offer a rail shuttle service to a number of communities solely dependent on access by rail. Amtrak, the U.S. passenger rail corporation, offers service to Montreal, Vancouver and Toronto (the latter in conjunction with VIA Rail). Seasonal services are provided between Vancouver and Calgary and Jasper by the Great Canadian Railtour Company.

**TABLE 6-3: RAILWAY REVENUES, 2000 AND 2001**

	2000	2001
(Millions of dollars)		
CN	3,880	3,917
CPR	2,945	2,950
VIA Rail	387	399
<b>Subtotal Class I</b>	<b>7,212</b>	<b>7,266</b>
Regional <sup>1</sup>	519	495
Shortlines <sup>1</sup>	369	384
<b>Total</b>	<b>8,101</b>	<b>8,145</b>

<sup>1</sup> Estimated for several carriers.

Source: Transport Canada, Statistics Canada

## EMPLOYMENT

As can be seen in Addendum Table A6-4, the level of railway employment has been declining at a significant rate for many years. Between 1990 and 2001, railway employment fell at a rate of 4.7 per cent annually, from more than 67,000 to less than 40,000 in 2001. Class I carriers experienced a decline in employment of 44 per cent over this period, or minus 5.2 per cent per year. Regional rail carriers also experienced reductions in employment, albeit at a lower rate (minus 3.7 per cent) and from a smaller base (about 5,600 in 1990 to 3,750 in 2001). In contrast, the shortline sector experienced an increase in employment levels of 260 per cent, or an annual growth rate of 12.4 per cent. In 2001, the shortline sector employed approximately 2,000 people. Consistent with these changes are the relative levels of participation in the rail sector by each class of carrier. The Class I carriers dropped from about 91 per cent of total rail industry employment in 1990 to about 85 per cent in 2001. Regional rail employment stayed roughly the same in relative terms, while shortline employment grew from a virtually non-existent proportion to about 5 per cent of the total rail industry employment.

Table 6-4 compares the level of employment in the rail industry in 2000 and 2001.

**TABLE 6-4: EMPLOYMENT IN THE RAIL INDUSTRY, 2000 AND 2001**

	2000	2001
Class I	35,422	34,016
Regional <sup>1</sup>	3,674	3,710
Shortlines <sup>1</sup>	1,803	2,064
<b>Total</b>	<b>40,899</b>	<b>39,790</b>

<sup>1</sup> Estimated for several carriers.

Source: Transport Canada, Statistics Canada

## ENERGY

Class I railways (including VIA Rail) consumed about 1.76 billion litres of fuel in 1990 and 1.77 billion litres in 2001, as can be seen in Addendum Table A6-5. Over this same period, however, output in terms of revenue tonne-kilometres (RTKms) increased by 30 per cent, from about 225 billion to about 293 billion RTKms, as can be seen in Addendum Table A6-6. The Class I carriers have therefore significantly increased their fuel efficiency, although they still accounted for 88.4 per cent of total sector fuel consumption in 2001. This increasing fuel efficiency is due largely to important investments by CN and CPR in new locomotive replacement programs in the latter half of the 1990s, to changes in operating practices, and to a reduction in operations over low-density lines, which for the most part were transferred to other operators.

Table 6-5 compares output in the railway sector in 2000 and 2001.

**TABLE 6-5: RAILWAY OUTPUT IN MILLIONS OF REVENUE TONNE-KILOMETRES, 2000 AND 2001**

	2000	2001
Class I	291,678.5	292,916.6
Regional <sup>1</sup>	23,273.4	20,847.5
Shortlines <sup>1</sup>	8,638.3	8,719.8
<b>Total</b>	<b>323,590.2</b>	<b>322,483.9</b>

<sup>1</sup> Estimated for several carriers.

Source: Transport Canada, Statistics Canada

Table 6-6 compares fuel consumption in the railway sector in 2000 and 2001.

**TABLE 6-6: RAILWAY FUEL CONSUMPTION, 2000 AND 2001**

	(Millions of litres)	
	2000	2001
Class I	1,762	1,772
Regional <sup>1</sup>	145	144
Shortlines <sup>1</sup>	87	89
<b>Total</b>	<b>1,993</b>	<b>2,005</b>

<sup>1</sup> Estimated for several carriers.

Source: Transport Canada, Statistics Canada

Regional railway fuel consumption and output have both remained relatively stable in recent years. Fuel efficiency of regional railways has been higher than Class I railways until recently, but this level of performance by regional railways has been due largely to the extraordinary fuel efficiency of Quebec North Shore & Labrador Railway, which, as a result of the nature of its operations, has experienced fuel efficiencies almost double the industry norm.

## FREIGHT TRANSPORTATION

The overall output of railways operating in Canada has been increasing since 1998, and it continued to increase slightly from 2000 to 2001 due to CN's 1.1 per cent increase to 168.1 billion tonne-kilometres. CPR's output remained similar to that of 2000, at 124.8 billion tonne-kilometres. Class II carriers reported a combined output of 28.4 billion tonne-kilometres, a decrease of almost four per cent from 2000. This was the first decrease of Class II carrier output since 1998, and was largely due to a decline in iron ore traffic in 2001.

Since 1996, movements of traffic forwarded to CN and CPR from Class II carriers have increased. From 2000 to 2001, however, such movements decreased by 3.6 per cent, from 19 to 18.3 million tonnes, due mainly to a drop in coal traffic from BC Rail. Movements whereby Class II carriers received traffic from CN and CPR remained steady at 11.2 million tonnes in 2001, putting a halt to the increasing trend since 1996. Traffic that originated on a Class II carrier, and was then forwarded to CN or CPR and subsequently forwarded to another Class II carrier to be terminated, totalled 1.45 million tonnes in 2001. The latter traffic, because it involves a bridge movement over CN or CPR, has both a forwarded and received component and would be double-counted if it was to be included in either forwarded or received traffic. Addendum Table A6-7 shows the trend of forwarded and received rail traffic since 1996, while Addendum Table A6-8 shows tonnage originating by railway sector since 1990.

Based on three quarters of data for 2002, CN output is expected to remain near 168 billion tonne-kilometres and CPR output is expected to decrease slightly to 121 billion tonne-kilometres. Output of Class II carriers is estimated to have decreased slightly to just over 20 billion tonne-kilometres.

## RAIL FREIGHT TRAFFIC — COMMODITIES

As shown in Addendum Table A6-9, annual rail loadings for 2002 decreased slightly to 261 million tonnes (not including receipts from U.S. connections). Volumes in Western Canada dropped 4 per cent to just below 140 million tonnes, while volumes in Eastern Canada increased four per cent to almost 122 million tonnes. Principal commodities loaded in Western Canada included coal, forest products, fertilizer materials and grain, while dominant loadings in Eastern Canada were iron ore, other ores and mine products, forest products and intermodal shipments.

### GRAIN

Grain shipments decreased in 1998 and 1999 to as low as 26.5 million tonnes and then rose to just over 30 million tonnes in 2000 and 2001. In 2002, grain shipments fell again, dropping by 28 per cent to 22 million tonnes. Shipments dropped 25 per cent in the West and 14 per cent in the East.

### COAL AND COKE

Coal and coke shipments experienced a significant increase in 1999, but this commodity group dropped 11 per cent in 2002 to just below 37 million tonnes. This is the lowest volume reported for this commodity group since 1993.

### FOREST PRODUCTS

Following a decline to just above 16 million tonnes in 1998, volumes of non-processed forest products remained steady until 2002, when shipments of this commodity increased 16 per cent to 19 million tonnes. In contrast, the volume of processed forest products has increased each year, reaching nearly 26 million tonnes in 2002. The net result has been a relatively stable volume of forest products hovering around 40 million tonnes, until 2002 when loadings reached 45 million tonnes.

### ORES AND MINE PRODUCTS

Following a decline experienced the year before, shipments of iron ore increased four per cent to 30 million tonnes in 2002. Other ores and mine products continued to increase, up one per cent to 25.4 million tonnes in 2002.



## FERTILIZER MATERIALS

Although shipments of fertilizer materials dropped in 2001 to the lowest value since 1994 at 24.5 million tonnes, they rose almost seven per cent to 26.1 million tonnes in 2002. Potash, sulphur and phosphate rock all experienced an increase from 2001.

## INDUSTRIAL PRODUCTS

Chemicals, the largest commodity of this group, increased 5.3 per cent to 15 million tonnes. Metals increased almost 10 per cent to 10.6 million tonnes and automotive increased 19 per cent to just below six million tonnes. Petroleum products decreased six per cent to 11.3 million tonnes, bringing to a halt the increasing trend since 1997.

## INTERMODAL

Between 1996 and 2001, CN and CPR intermodal tonnage grew by 6.7 million tonnes, for an average annual growth rate of 6.5 per cent. North American intermodal traffic was very robust, as growth exceeded eight per cent per year over the same five-year period. These trends are evident in Addendum Figure A6-1. As seen in Addendum Figure A6-2, Canadian origin-destination volumes increased at an even higher average annual growth rate of 11 per cent over the five-year period. There was a significant difference in growth between rail intermodal exports and imports to/from offshore regions: exports increased by an annual average of 1.7 per cent, while imports grew by 7.7 per cent annually.

Compared with the historical trend, growth in total rail intermodal volumes was considerably slower between 2000 and 2001 (2.5 per cent); however, this was mostly due to the flat performance of both import and export volumes. North American traffic volumes remained strong, increasing by 8.4 per cent and accounting for 46 per cent of total rail intermodal volumes, as seen in Addendum Figure A6-3. Canadian origin/destination volumes increased by 9.3 per cent during the year, making up 33 per cent of total market share.

As seen in Addendum Figure A6-4, containers on flat cars (COFC) continued to increase their market share, accounting for more than 92 per cent of total intermodal volumes in 2001. This is up considerably from 1996, when COFC only accounted for 77 per cent of total intermodal traffic. This increase in COFC share came at the expense of trailer on flat car (TOFC) volumes, which decreased proportionately.

## RAIL FREIGHT TRAFFIC BETWEEN CANADA AND THE UNITED STATES

Addendum Table A6-10 shows rail export and import volume by commodity since 1996. Export rail tonnage increased slightly to 65.2 million tonnes in 2002, continuing the increasing trend since 1996. Forest products remained the largest contributor to export tonnage, increasing to 24.8 million tonnes. Other major export commodities included chemicals and fertilizer materials, accounting for 17.8 million tonnes, or 27 per cent of total export tonnage in 2002. The largest change was experienced by grain, which dropped 24 per cent to 3.9 million tonnes, placing exports of metals as the third-largest commodity with 4.2 million tonnes.

After exports of coal volume almost tripled in 2000 and increased again in 2001, they decreased slightly to 1.4 million tonnes in 2002, accounting for two per cent of total export volume. Exports of iron ore took another large jump, almost tripling to 405,000 tonnes in 2002. This change, however, is contrary to overall movements of iron ore which are predominantly exported by marine.

Addendum Table A6-11 shows rail export and import value by commodity since 1996. Consistently, automotive has been the largest contributor to the value of exports. In 2002, this commodity accounted for almost 55 per cent, followed by forest products at 20 per cent. Like volume, the value of exports increased slightly to \$75.6 billion.

Ontario remained the largest contributor to rail export volume and value, originating 27.4 per cent of export volume (17.9 million tonnes) and 67.9 per cent of export value (\$51.4 billion) in 2002.

British Columbia and Saskatchewan were the other major contributors of export volume, originating a combined 22.8 million tonnes, or 35 per cent of total exports. Quebec and British Columbia followed Ontario with a combined 19.1 per cent share of export value, totalling \$14.4 billion. These values are observed in Addendum tables A6-12 and A6-13, which show export volume and value by province of origin.

Import rail tonnage had been increasing at a larger rate than exports since 1996, but in 2002 experienced a slight decline to 19.6 million tonnes. Major commodities included chemicals, grains, ores and mine products and other agricultural and food products. In combination, these commodities accounted for 63 per cent of total import volume.

Although not as large as the year before, imports of grains rose 30 per cent in 2002 to 2.4 million tonnes.



Automotive and chemicals remained the top commodities in terms of value, accounting for 56 and 21 per cent of total imports, respectively, or a combined \$16.5 billion.

As seen in Addendum Table A6-14, Ontario cleared 47 per cent of imports, 9.3 million tonnes in total. Quebec and British Columbia cleared a combined 4.8 million tonnes. In terms of value, Ontario was also the dominant province of clearance with \$15.2 billion, up 15 per cent from 2001, as seen in Addendum Table A6-15.

Further details on exports and imports can be seen in Addendum tables A6-16 to A6-19. These tables show major commodities originating from and cleared in the provinces mentioned above.

## BORDER CROSSING POINTS

As seen in Addendum Table A6-20, Fort Frances and Sarnia, both in Ontario, were the dominant border crossing points for rail exports by volume, accounting for 22 per cent (14.3 million tonnes) and 17 per cent (11 million tonnes) of exports, respectively, in 2002. Forest products, fertilizer materials and chemicals were the major commodities exported at these border points.

As seen in Addendum Table A6-21, Sarnia, Windsor and Fort Erie were the dominant border crossing points by value of exports (accounting for 75 per cent of total exports), due largely to movements of automotive products. Other commodities exported at these locations that were significant contributors to export value include metals and forest products.

Sarnia was also the leading border crossing point for import tonnage, accounting for 15 per cent of total rail import volume in 2002 (2.9 million tonnes), as shown in Addendum Table A6-22. The major commodities imported at Sarnia were chemicals, agricultural products and food and grains.

Rail imports cleared at Calgary increased in 2002 due to the continuing rise of corn shipments from the U.S., as well as a slight increase in iron and steel imports. A change in the port of clearance from Huntingdon to Vancouver for limestone flux resulted in a significant decline and rise of tonnage at these locations. Other major locations as port of clearance included Toronto, Sault Ste. Marie and Montreal. Windsor, by far, was the leading border crossing point by value of imports, largely as a result of being the dominant border crossing point of automotive products. Just over 16 per cent of imports by value entered Canada at this location (\$3.5 billion), as seen in Addendum Table A6-23.

## OVERSEAS TRADE

Class I railways carried a total of 91 million tonnes of goods to and from Canadian ports in 2001, a 5.3 per cent decrease from 2000. Traffic in transit to and from the United States decreased by six per cent in 2001 to 3.9 million tonnes. Addendum Table A6-24 shows the fluctuation of rail-marine exports and imports since 1996.

British Columbia, Alberta and Saskatchewan continued to be the major contributors to rail-marine exports in 2001, with a combined 69.3 million tonnes, although both Alberta and Saskatchewan experienced a drop in export volume. Addendum Table A6-25 shows rail-marine exports since 1996 for all provinces of origin and the U.S.

Coal traffic remained steady at slightly above 31 million tonnes in 2001, while rail-marine exports of grain decreased by 6.5 per cent to just under 20 million tonnes. Other major commodities included agricultural and food products, and fertilizer materials, which also declined in 2001. Addendum Table A6-26 shows rail-marine exports by commodity since 1996.

Rail-marine imports of Class I carriers decreased slightly in 2001 to 7.7 million tonnes, but the portion of intermodal traffic continued to increase to 90 per cent of total imports.

Ontario and Quebec remained the top two destination provinces for rail-marine imports, totalling 4.6 million tonnes in 2001 (59 per cent of the total). The volume of goods destined for Alberta continued to drop, down 21 per cent to 0.5 million tonnes in 2001. Addendum Table A6-27 shows rail-marine imports since 1996 for all destination provinces and the U.S.

Fertilizer materials continued to decrease substantially to 96,000 tonnes in 2001, while petroleum products experienced a dramatic increase from 3,000 tonnes in 2000 to 17,000 tonnes in 2001. Addendum Table A6-28 shows rail-marine imports by commodity since 1996.

## PASSENGER TRAFFIC

As seen in Addendum Table A6-29, total passengers carried and passenger-kilometres for intercity rail traffic increased by 1.4 per cent in 2001 from 2000. The number of VIA Rail passengers increased by 1.8 per cent to 3.9 million and passenger-kilometres increased by 1.9 per cent to 1.5 billion. Class II carriers with intercity services included in Addendum Table A6-29 are Algoma Central, BC Rail, Ontario Northland and the Quebec North Shore & Labrador Railway. Unlike VIA Rail, these carriers experienced a combined 2.2 per cent decrease to 0.35 million passengers and a 5.8 per cent decrease in passenger-kilometres to 88 million. These values are expected to decrease again in 2002 due to BC Rail's decision to drop services on its passenger routes.

The Great Canadian Railtour Company provides a seasonal rail passenger service between Vancouver, Calgary and Jasper. Also, the U.S. passenger rail corporation, Amtrak, provides service to Toronto, Montreal and Vancouver in cooperation with VIA Rail.

Commuter rail traffic in Toronto, Montreal and Vancouver increased 7 per cent, reaching 50 million passengers in 2002. This change reflects an increase in Toronto's GO Transit and Montreal's Agence Métropolitaine de Montréal (AMT) riderships. Once again, GO Transit represented 70 per cent of commuter rail traffic. Addendum Table A6-30 shows total commuter rail ridership since 1994 for these three cities.

## PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE

### RAIL FREIGHT CLASS I RAILWAYS

From 1996 to 2001, the revenues of CN and CPR operations in Canada grew, on average, by 2.2 per cent a year. Almost 60 per cent of the revenue growth of these railways came from intermodal services, which in 1996 were generating about one fifth of their total revenues. The growth in railway revenues was achieved in the context of a continuous decline in freight rates, 0.8 per cent per year since 1996. By commodity groupings, the freight rates of mineral bulk commodities showed the strongest declines, at 3.6 per cent per year. Since 1998, reductions of rail freight rates for agricultural products have been second only to those of mineral bulk commodities.

The reduction of rail freight rates has been made possible by the strong productivity gains of the industry, which have averaged growth of 4.3 per cent a year since 1996. In 2001, productivity increased by 2.3 per cent, after two years of unparalleled growth from 1998 to 2000 (18 per cent). These productivity gains allowed the railways to reduce their unit cost annually by 3.2 per cent between 1996 and 2001.

The productivity gains have also allowed CN and CPR to improve their financial results. Operating income in 2001 reached \$1.4 billion, with the operating ratio declining for the sixth consecutive year. In 2002 (based on the first three quarters' results), the combined operating ratio of the two railways fell to 75 per cent. The shortline railways maintained their financial returns in dollar terms but these were below the level necessary to renew their assets (see Table 6-7). See tables A2-61 to A2-64 in the Addendum for details.

**TABLE 6-7: FINANCIAL INDICATORS OF SHORTLINE<sup>1</sup> RAILWAYS**

	1999	2000	2001
Net Fixed Assets in \$M	349.7	481.1	505.6
Operating Revenues in \$M	285.8	320.0	356.8
Operating Expenses in \$M	248.7	285.2	322.2
Net Income in \$M	37.1	34.8	34.6
ROA in %	10.6	7.2	6.8
CTA's Approved Cost of Capital for CPR	10.9	11.8	11.4

Note: ROA = Return on Assets. CTA = Canadian Transportation Agency

<sup>1</sup> Class II Railroads, except Quebec North Shore Railway, Ontario Northlands and BC Rail

Source: Transport Canada, based on Statistics Canada files and Canadian Transportation Agency (CTA)

### VIA RAIL

Since 1996, VIA Rail's revenues from its operations have grown by 7.1 per cent per year. This growth resulted from a combination of prices rising by 5.1 per cent and output rising by 1.8 per cent. In 2002, the increases in prices and traffic were slower, at 4.1 and 2.4 per cent, respectively.

In 2000, VIA Rail's hedging strategies limited fuel price increases to 16 per cent. While fuel prices rose by less than six per cent for rail freight carriers in 2001, they rose by 24 per cent for VIA Rail. In 2001, VIA Rail's overall productivity declined by one per cent, with capital productivity showing the largest decline, which was due to the first phase of its capital expansion program. Total unit costs increased by 2.2 per cent. Since 1996, the annual productivity gains of VIA Rail have averaged 1.5 per cent a year, whereas unit costs have declined by 0.7 per cent annually.

VIA Rail recovered 47 per cent of its costs in 2001, compared with 23 per cent in 1991; more than half of this improvement came from cost reductions.

For more information on price, productivity and performance in the rail sector, see tables A2-61 to A2-64 in the Addendum.

*The U.S. economic slowdown affected Canadian trucking firms.  
Urban transit ridership decreased in 2001,  
while the share of light trucks and vans  
in the light vehicle fleet continued to increase.*

## MAJOR EVENTS IN 2002

### REGULATIONS

#### VEHICLE WEIGHTS AND DIMENSIONS

In early 2002, the Atlantic Provinces implemented new vehicle weight and dimension regulations that established common weight and dimension limits for all new vehicles starting with model year 2003. Further changes will be introduced over a transition period extending until December 2009 to allow trucking companies to phase out non-complying equipment. Also, in Atlantic Canada, public consultations were initiated on harmonized special permit conditions for movements within the region of oversize and overweight loads.

Ontario continued its policy reform initiative for vehicle weights and dimensions by focusing on the use of liftable axles on end-dump semi-trailers and liftable axles on multi-axle semi-trailers and on double trailer combinations.

The Ministers responsible for transportation in the four western provinces endorsed two Memoranda of Understanding: one to standardize the conditions applicable to special permits for movement of overweight and/or overdimensional indivisible loads; and one to harmonize special permit conditions for overdimensional movements of hay bales within the region.

#### SAFETY REGULATIONS

Nova Scotia published regulations to bring commercial van and small bus services under a safety regime based on the National Safety Code for Motor Carriers. The normal threshold for National Safety Code standards is for vehicles carrying 10 or more passengers, including the driver. The Nova Scotia regulations provide, among other

things, for periodic inspection of vehicles and they bring the drivers under the National Safety Code commercial driver hours of service regime. The regulations took effect at the beginning of 2003.

### REPORT OF SENATE STANDING COMMITTEE ON TRANSPORT AND COMMUNICATIONS

After reviewing the issues facing the Canadian bus industry, the Senate Standing Committee on Transport and Communications tabled its report entitled *Intercity Bus Service in Canada* in December 2002.

The Committee made a number of recommendations:

- To reverse the onus, over a five-year transition period, in the entry test to the opponents to prove that a new service is not in the public interest.
- To implement, with respect to the concerns of possible service loss on low-density and rural routes from liberalized entry, a modest transitional (over five years) federal subsidy program co-funded with the provinces/territories, municipalities and local businesses, aimed specifically at community bus services in rural areas.
- To review, at the end of the five years, the entry controls to determine whether a further liberalization of entry controls would be required.

The Committee also made the following recommendations: a federal-provincial review of the National Safety Code provisions to ensure coverage of small buses and vans used commercially; a re-appraisal of the problems of bus accessibility; federal-provincial collaboration to examine how Canada could fully benefit from the environmental advantages of bus transportation; and possible federal implementation of the key provisions even without consensus among jurisdictions and stakeholders.



## INFRASTRUCTURE

### ROAD NETWORK

The Canadian road network exceeded 1.4 million two-lane equivalent kilometres. The network consisted of 110,000 kilometres of freeway and primary highway, 115,000 kilometres of secondary highways and other arterial roads, and more than 1.2 million kilometres of local streets and rural connector roads. For a breakdown of Canada's road network by province, see Table A7-1 in the Addendum.

## INDUSTRY STRUCTURE

### TRUCKING INDUSTRY

The trucking industry includes for-hire carriers, owner-operators, private carriers and courier firms. It generated an estimated \$52.5 billion in revenues in 2001.

**For-hire trucking firms** haul freight owned by others for compensation. They offer either truckload (TL) or less-than-truckload (LTL) services, or a mix of the two. For-hire trucking services can be further categorized according to the types of freight carried, such as general freight services, household goods services, liquid and dry bulk services, forest product services and specialized freight services. For-hire trucking firms alone account for more than 40 per cent of the Gross Domestic Product of the whole transportation sector. There were approximately 9,700 for-hire trucking firms in Canada in 2001.

The top ten for-hire trucking companies<sup>1</sup> in Canada, based on total number of vehicles (tractors/trailers) in their fleet, are Trimac Transportation Services (Calgary, Alberta, 7,052 vehicles), TransForce (Montreal, Quebec, 6,825 vehicles), Vitran Corporation, (Toronto, Ontario, 5,820 vehicles), SLH Transport (Kingston, Ontario, 4,295 vehicles), TransX (Winnipeg, Manitoba, 4,206 vehicles), Robert Transport / Groupe Robert (Boucherville, Quebec, 4,010 vehicles), Paul's Hauling Group (Winnipeg, Manitoba, 3,756), Mullen Transportation Inc. (Aldersyde, Alberta, 3,701 vehicles), Day & Ross Transportation Group (Hartland, New Brunswick, 3,384 vehicles) and Clarke Inc. (Toronto, Ontario, 3,150 vehicles).

A number of strategic alliances, mergers and acquisitions of motor carriers took place during 2002. Mullen Transportation acquired Temor Oil Services (1974), the largest transporter of crude oil and provider of fluid hauling services to the heavy oil industry in the Lloydminster, Alberta, area. TransForce acquired several carriers: Canpar Transport, a non-expedited parcel-delivery company based in Mississauga; Japiro Transport, a small LTL and truckload carrier operating in Quebec; Tri-Line Expressways Ltd.'s logistics and freight brokerage business in Mississauga; and Retex Transport, a specialized explosives, petroleum products and propane carrier based in Quebec City. Contrans acquired the trucking assets of Tri-Line Expressways Ltd., the flatbed and general freight division of TCT Logistics, which entered receivership in January 2002.

**Owner-operators** are small independent for-hire operators who own or lease their own truck and who haul trailers or other equipment for a carrier. Owner-operators work directly for a shipper and for either private or for-hire carriers, or both. The use of owner-operators allows trucking companies to expand or contract capacity as market conditions change. There were approximately 36,000 owner-operators in Canada in 2000.

**Couriers** include for-hire operators providing overnight or later delivery and same-day messenger delivery. In 2001, the courier industry generated estimated total revenues of \$5.0 billion on average volumes of 2.1 million packages per day. There are approximately 17,200 small courier companies that generate revenues less than \$1 million per year. These small companies account for 97 per cent of the total number of courier companies yet account for only 14 per cent of total courier revenues.

Trucking bankruptcies reported in any given year come from the for-hire segment of the industry. For the number of bankruptcies in the trucking industry from 1990 to 2002, broken down by region, see Table A7-2 in the Addendum. In 2002, there were 799 trucking bankruptcies, 14 per cent fewer than in 2001. This was the first decrease in the last four years. The most significant decrease in the reported number of bankruptcies in trucking was in Ontario (from 329 to 229) and in Quebec (from 159 to 131). The Atlantic Provinces had five fewer trucking bankruptcies in 2002 than in 2001. The Prairie Provinces and British Columbia (including the territories) had a small increase.

<sup>1</sup> Source: *Today's Trucking*, March 2002

**Private trucking** consists of those companies who primarily haul their own freight but who may, from time to time, haul other people's goods for compensation. Most companies that own trucks to haul their own products do not ordinarily record revenues for this operation. So the estimate of \$24.4 billion for private trucking is better viewed as the operating costs of trucks for these companies. Private trucking dominates in the urban and local haulage areas but its market share quickly diminishes as haul distances increase.

General freight carriers generated 58 per cent of the total revenues of large for-hire trucking firms in 2001. The share of revenues of specialized freight carriers has been increasing in recent years. Table 7-1 shows the revenues of large for-hire trucking firms by market segment from 1999 to 2001.

Total for-hire trucking revenues can be broken down by the relative size of carriers. Size can be measured by four categories of annual revenues: \$25 million or more, \$12 to \$25 million, \$1 to \$12 million, and less than \$1 million. As Table 7-2 shows, this breakdown for 2000 and 2001 was relatively stable. Table A7-3 in the Addendum shows the relative size of carriers from 1991 to 2001.

**TABLE 7-1: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1999 – 2001**

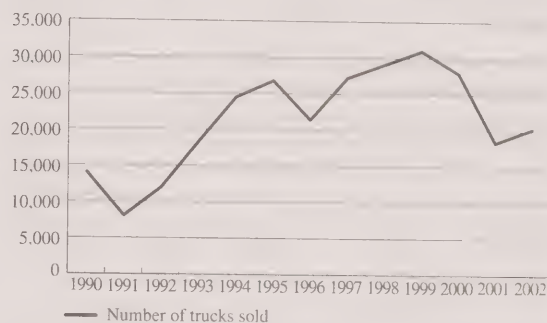
	<i>Revenues (Millions of dollars)</i>			<i>Per cent of Total</i>		
	1999	2000	2001	1999	2000	2001
General freight	10,675.9	12,092.3	12,761.8	63.0	62.1	60.8
Other special freight	2,329.1	3,002.8	3,456.3	13.7	15.4	16.5
Liquid bulk	1,152.2	1,640.2	1,654.5	6.8	8.4	7.9
Dry bulk	1,365.1	1,138.8	1,470.8	8.1	5.8	7.0
Forest products	888.6	889.4	1,030.2	5.2	4.6	4.9
Household goods movers	532.5	705.6	629.1	3.1	3.6	3.0
<b>Total</b>	<b>16,943.4</b>	<b>19,469.0</b>	<b>21,002.8</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: For-hire trucking firms with annual earnings of \$1 million or more.

Source: Canadian Vehicle Manufacturers Association

Class 8 trucks, used in intercity for-hire operations, have seen yearly fluctuations in reported sales that have been driven by a number of factors, including the profitability of carriers, the demand for trucking services, the useful life of trucks, and carriers' fleet replacement policy/cycle. As Figure 7-1 shows, the 2001 and 2002 sales of Class 8 trucks reported reflect to some extent the economic slowdown of the U.S. economy and its impact on transborder trucking demand.

**FIGURE 7-1: SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 2002**



Source: Canadian Vehicle Manufacturers' Association

## BUS INDUSTRY

The Canadian bus industry can be divided into three principal sectors: transit, school and intercity/charter/tour. Intercity/charter/tour could perhaps best be defined as including all bus service that neither transports pupils nor offers transit or paratransit service. Traditionally, the main characteristic distinguishing intercity and charter operators from the other bus sectors has been the use of motor coaches (as opposed to school or transit buses). The school and intercity/charter/tour sectors are closely interrelated, and corporate ownership cuts across sectoral lines. Carriers in all sectors and of all sizes often offer a mix of services.

**TABLE 7-2: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 2000 – 2001**

Year	<i>Small Carriers (Less than \$1 million)</i>		<i>Medium Carriers (\$1 – 12 million)</i>		<i>Large Carriers (\$12 – 25 million)</i>		<i>Top Carriers (Over \$25 million)</i>		<i>Grand Total Revenue (Millions of dollars)</i>
	<i>Revenue (Millions of dollars)</i>	<i>Share (Per cent of total)</i>	<i>Revenue (Millions of dollars)</i>	<i>Share (Per cent of total)</i>	<i>Revenue (Millions of dollars)</i>	<i>Share (Per cent of total)</i>	<i>Revenue (Millions of dollars)</i>	<i>Share (Per cent of total)</i>	
2000	2,634	11.9	8,246	37.3	4,660	21.1	6,562	29.7	22,103
2001	2,750	11.6	9,834	41.4	4,506	19.0	6,662	28.0	23,753

Note: Including motor for-hire carriers of freight earning annual revenues of \$30,000 or more.

Sources: Transport Canada, based on Statistics Canada, Quarterly Motor Carriers of Freight Survey (QMCF) 1999 – 2001; 2001 small for-hire carriers data estimated

**Scheduled Intercity Bus Carriers** — These carriers primarily operate scheduled services between two or more urban areas. Such services link all Canadian provinces and territories except Nunavut. Through its ownership of Greyhound, Grey Goose, Voyageur Colonial, Penetang-Midland Coach Lines and a few other smaller companies, Laidlaw is the largest scheduled intercity operator in Canada. Other major operators include Coach Canada, Orleans Express, SMT/Acadian Lines and Saskatchewan Transportation. Smaller regional operators include Ontario Northland, Les Autobus Maheux, Intercar, and DRL. Almost all scheduled intercity operators provide at least some charter service.

**Charter/Tour/Shuttle Carriers** — Charter service is characterized by the rental of a bus to a person or group where all passengers embark and disembark at the same point. Tour carriers primarily provide sightseeing services over fixed routes and sell individual seats. Shuttle carriers are primarily involved in providing service to airports and rail terminals. Some of the larger charter/tour carriers include Brewster Transportation & Tours, Charter Bus Lines of British Columbia, International Stage Lines Inc., Pacific Western Transportation Ltd. and Coach Canada. A single carrier frequently offers both charter and shuttle services and it is not uncommon for carriers in this group to also provide school bus service.

**School Service** — As the name implies, school bus carriers provide bus service to transport students to and from school. Most school bus operators also provide some charter service. Laidlaw is the largest school bus carrier in Canada.

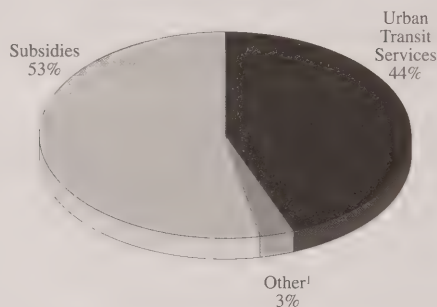
**Urban Transit Service** — All major cities in Canada have some form of public transit service, and in terms of revenues, urban transit represents the largest component of Canada's bus industry. Municipal and provincial governments subsidize urban transit services. Some urban transit operators offer school bus and charter services as well as services to travellers with disabilities.

## BUS TRANSPORTATION

The Canadian bus industry is composed of approximately 1,000 operators who collectively move more than 1.5 billion passengers each year. In 2000, the industry generated more than \$6.2 billion in total revenues, including subsidies. In 2001, only a partial view of the industry was known, as results of a new survey on passenger bus and urban transit introduced by Statistics Canada in 2002 were still pending.

The bus industry can be looked at by type of establishment (i.e. principal company activity) and by the type of bus service provided. Urban transit represented the largest sector, accounting for 68 per cent of total bus revenues in 2000 (including subsidies), or 50 per cent of total bus revenues (excluding subsidies). In 2001, urban transit revenues totalled \$4.4 billion, up 3.3 per cent from 2000. Subsidies were the main source of revenues, with 53 per cent of total urban transit revenues, as shown in Figure 7-2.

FIGURE 7-2: TOTAL REVENUES BY SOURCE – URBAN TRANSIT SECTOR, 2001



<sup>1</sup> Other includes charter, school bus and other passenger bus services.

Source: Transport Canada, using Statistics Canada – Canadian Urban Transit Association (CUTA) data

From 1995 to 2001, urban transit operators' operating revenues grew at an average annual rate of 4.8 per cent, while subsidies rose at an annual rate of 2.5 per cent over the same period. As a result, the share of subsidies in total revenues decreased from 57 to 53 per cent over this period.

In terms of passengers using urban transit, the long-term trend shows that an annual increase of 1.2 per cent happened in the 1980s to reach a peak of 1,528 million passengers in 1990; then a steady decrease was recorded to a low of 1,353 million passengers (1996) before recovering to register 1,481 million passengers in 2001.

A similar pattern is seen for distance travelled by urban transit vehicles. Vehicle-kilometres jumped from 716.4 million to 814.4 million from 1996 to 2001, an average annual increase of 2.6 per cent.

Since 1996, the urban transit fleet increased by almost 12 per cent to a record high of 14,560 vehicles in 2001. The biggest change in the fleet composition over this period was the replacement of standard buses by more accessible, low-floor buses.



Full-time employment in urban transit decreased from 37,494 to 35,867 employees over the 1995 – 1998 period before increasing to 39,460 employees in 2001. The average salary, including benefits, for employees was estimated at \$54,012 in 2001.

For more information on the bus industry, see tables A7-4 to A7-7 in the Addendum.

## PASSENGER TRANSPORTATION

### LIGHT VEHICLE FLEET AND USE

In the 10 provinces, 16.8 million light vehicles (i.e. vehicles with a gross weight less than 4,500 kilograms) were in scope for the 2001 Canadian Vehicle Survey (CVS). Of this total, 10.5 million were classified as passenger cars and station wagons, 2.3 million vehicles listed as vans, 2.5 million vehicles were defined as pickup trucks, and 1.3 million were classified as sport-utility vehicles (SUVs). As a group, light trucks, SUVs and vans represented 37 per cent of the light vehicle fleet. As Table 7-3 shows, vans and light trucks were on average driven more than passenger cars, accounting for 41 per cent of vehicle-kilometres. Vans and light trucks were driven on average 19,000 kilometres per year, while cars and station wagons were driven about 15,500 kilometres, a difference of more than 20 per cent. Vans and light trucks also had higher vehicle occupancies than passenger cars, accounting for 43 per cent of passenger-kilometres. This works out to an average occupancy of 1.7 persons per light truck or van, slightly higher than for passenger cars and station wagons.

As expected, there was a wide gap in fuel efficiency between cars and the heavier trucks and vans. Calculated fuel efficiency for cars and station wagons averaged about 10 litres per 100 kilometres, which was about 25 per cent lower than the corresponding consumption rate of 13 litres per 100 kilometres for vans and trucks.

With few exceptions, the distribution of light vehicles, vehicle-kilometres and passenger-kilometres by province/territory broadly followed the distribution of population. In terms of motorization (number of vehicles per capita), most jurisdictions were clustered around the overall average of about 540 vehicles per 1,000 people, except for Alberta and Saskatchewan, whose rate was more than 10 per cent higher, and Newfoundland and Labrador, whose rate was 20 per cent below the national average. Annual average vehicle use and average vehicle occupancy were tightly clustered around the

**TABLE 7-3: DISTRIBUTION OF VEHICLE ACTIVITY BY VEHICLE BODY, 2001**

<i>Light trucks/vans</i>	<i>Car</i>	<i>Station wagon</i>	<i>Van</i>	<i>Sport-utility</i>	<i>Pickup truck</i>	<i>Subtotal</i>	<i>Total</i>
Vehicles (millions)	10.2	0.4	2.4	1.3	2.6	6.2	16.8
Per cent share	60.5	2.2	14.1	7.6	15.5	37.2	100.0
Vehicle-km (billions)	158.9	5.6	46.9	24.5	47.4	118.8	283.2
Per cent share	56.1	2.0	16.5	8.6	16.7	41.9	100.0
Passenger-km (billions)	248.4	10.1	91.5	41.9	69.3	202.7	461.1
Per cent share	53.9	2.2	19.8	9.1	15.0	44.0	100.0
Litres of fuel (billions)	15.7	0.6	6.1	3.0	6.5	15.7	32.0
Per cent share	49.2	1.8	19.0	9.5	20.5	49.0	100.0
Average distance driven (thousands of kilometres)	15.6	15.0	19.8	19.3	18.2	19.0	16.9
Persons per vehicle	1.56	1.80	1.95	1.71	1.46	1.71	1.63
Fuel efficiency (L/100km)	9.9	10.4	13.0	12.4	13.8	13.2	11.3

Note: Figures in this table exclude the Territories.

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

national averages of 17,000 kilometres per vehicle and 1.6 persons per vehicle. Average light vehicle fuel efficiency did show some variation across jurisdictions: the Atlantic Provinces had an average fuel consumption at least 10 per cent higher than the national average, varying between 12 and 15 litres per 100 kilometres. Quebec and Ontario had the lowest fuel consumption rates, each below 11 litres per 100 kilometres, while the Western provinces clustered around the national average, with the exception of British Columbia, whose rate was more than 13 litres per 100 kilometres.

Table 7-4 compares the fuel efficiency of vehicles by province in 2001.

## FREIGHT TRANSPORTATION

### HEAVY TRUCK FLEET

The Canadian Vehicle Survey provides information on the heavy truck fleet and its use characteristics. In 2001, more than 580,000 trucks were registered with a gross vehicle weight of at least 4,500 kilograms. As Table 7-5 shows, this fleet was split between 330,000 medium trucks weighing between 4,500 and 15,000 kilograms and almost 254,000 Class 8 (heavy) trucks weighing more than 15,000 kilograms. Three quarters of the heavy truck fleet



TABLE 7-4: FUEL EFFICIENCY OF VEHICLES, 2001

	Vehicles (Thousands)	Vehicle- kilometres (Billions)	Passenger- kilometres (Billions)	Litres of fuel purchased (Billions)	Averages		
					Vehicles per 1,000 population	Average distance driven (Thousands)	Average fuel efficiency (L/100km)
Newfoundland and Labrador	235	4.3	8.0	0.6	441	18.3	14.4
Prince Edward Island	72	1.2	1.8	0.2	521	16.0	15.0
Nova Scotia	510	9.0	15.3	1.2	541	17.7	12.9
New Brunswick	427	7.8	12.8	0.9	565	18.2	12.2
Quebec	3,789	65.5	101.1	6.7	511	17.3	10.2
Ontario	6,326	105.1	174.4	11.3	532	16.6	10.8
Manitoba	579	9.7	15.8	1.1	504	16.7	11.0
Saskatchewan	612	11.1	18.7	1.3	602	18.2	11.5
Alberta	1,974	35.3	58.4	3.9	645	17.9	11.0
British Columbia	2,226	33.8	54.4	4.5	543	15.2	13.4
Yukon	18	0.3	N/A	N/A	582	16.7	N/A
Northwest Territories	18	0.3	N/A	N/A	444	16.7	N/A
Nunavut	3	0.04	N/A	N/A	99	14.6	N/A
<b>Canada</b>	<b>16,791</b>	<b>283.4</b>	<b>460.6</b>	<b>31.7</b>	<b>540</b>	<b>16.9</b>	<b>11.2</b>

	Percentage distribution				Percentage of national average		
	Vehicles	Vehicle-kilometres	Passenger-kilometres	Litres of fuel	Vehicles	Vehicle-kilometres	Passenger-kilometres
Newfoundland and Labrador	1.4	1.5	1.7	2.0	81.7	108.2	114.1
Prince Edward Island	0.4	0.4	0.4	0.5	96.5	94.8	94.6
Nova Scotia	3.0	3.2	3.3	3.7	100.2	104.6	104.5
New Brunswick	2.5	2.7	2.8	3.0	104.7	107.8	101.0
Quebec	22.6	23.1	21.9	21.1	94.6	102.5	94.9
Ontario	37.7	37.1	37.9	35.8	98.5	98.4	102.1
Manitoba	3.4	3.4	3.4	3.4	93.4	98.9	100.4
Saskatchewan	3.6	3.9	4.1	4.0	111.5	107.7	103.6
Alberta	11.8	12.4	12.7	12.3	119.6	105.8	101.9
British Columbia	13.3	11.9	11.8	14.3	100.6	90.0	99.0
Yukon	0.1	0.1	N/A	N/A	107.8	98.7	N/A
Northwest Territories	0.1	0.1	N/A	N/A	82.2	98.8	N/A
Nunavut	0.02	0.01	N/A	N/A	18.3	86.7	N/A
<b>Canada</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

TABLE 7-5: CANADA'S HEAVY TRUCK FLEET, 2001

	Vehicles (Thousands)		Vehicle-kilometres (Millions)		Percentage distribution			
	Medium	Heavy	Medium	Heavy	Vehicles Medium	Heavy	Vehicle-kilometres Medium	Heavy
Newfoundland and Labrador	3.6	2.5	121	164	1.1	1.0	1.9	0.9
Prince Edward Island	1.7	2.3	20	47	0.5	0.9	0.3	0.3
Nova Scotia	7.9	7.0	162	546	2.4	2.7	2.5	2.9
New Brunswick	7.7	3.8	173	128	2.3	1.5	2.7	0.7
Quebec	49.0	29.2	1,042	3,120	14.8	11.5	16.1	16.8
Ontario	72.2	97.8	1,916	8,202	21.9	38.6	29.6	44.2
Manitoba	8.6	11.8	201	1,332	2.6	4.7	3.1	7.2
Saskatchewan	43.8	21.6	478	987	13.3	8.5	7.4	5.3
Alberta	82.0	62.8	1,403	3,518	24.8	24.8	21.7	18.9
British Columbia	52.2	12.9	942	388	15.8	5.1	14.6	2.1
Yukon	0.8	0.7	9	61	0.2	0.3	0.1	0.3
Northwest Territories	0.6	1.0	9	85	0.2	0.4	0.1	0.5
Nunavut	0.2	0.1	1	-	0.08	0.04	0.02	0.00
<b>Canada</b>	<b>330.0</b>	<b>253.6</b>	<b>6,476</b>	<b>18,577</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

was concentrated in three provinces: Ontario with 40 per cent, Alberta with 25 per cent, and Quebec with 11.5 per cent. The medium-sized truck fleet was a little more evenly distributed with five provinces sharing about 90 per cent of the total. The distribution of vehicle-kilometres was heavily tilted in favour of heavy trucks with over 18 billion

being performed in 2001, versus less than 6.5 billion for medium trucks. The distribution of heavy truck vehicle-kilometres was even more concentrated in Ontario, Alberta, and Quebec with these three provinces controlling 80 per cent of the kilometres driven.

In 2001, there was a wide variation in the average kilometres driven between medium and heavy trucks: on average, medium trucks were driven 20,000 kilometres, while heavy trucks were driven almost 75,000 kilometres. By province, the variation in the average kilometres heavy trucks were driven was huge, ranging from a low of 20,000 kilometres per vehicle in Prince Edward Island to more than 100,000 kilometres per vehicle in both Quebec and Manitoba. By contrast, medium truck use across the provinces clustered fairly closely around the national average.

## CONFIGURATION

Table 7-6 breaks down truck vehicle-kilometres driven by type of vehicle configuration. Medium trucks were characterized by the straight truck configuration, as more than 80 per cent of the kilometres driven used this format. Heavy trucks, by contrast, were dominated by various tractor-trailer combinations; the most popular was a tractor and one trailer (the conventional 18 wheeler), which accounted for almost 65 per cent of the heavy truck vehicle-kilometres. Straight trucks performed only 15 per cent of the heavy truck vehicle-kilometres.

**TABLE 7-6: VEHICLE-KILOMETRES DRIVEN BY TYPE OF VEHICLE CONFIGURATION, 2001**

	Medium (Per cent)	Heavy (Per cent)
Straight truck	80.9	14.4
Tractor only	0.1	6.6
Tractor and 1 trailer	2.7	63.9
Tractor and 2 trailers	0.0	11.9
Tractor and 3 trailers	0.0	0.4
Other	16.3	2.8
	<b>100.0</b>	<b>100.0</b>

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

Table 7-7 shows the purpose that medium and heavy trucks were typically used for. Medium trucks were put to a mix of uses: carrying goods or equipment, a traditional freight-hauling role, accounted for about 50 per cent of the vehicle-kilometres, but non-freight carrying functions such as making service calls accounted for more than 40 per cent of the vehicle-kilometres. These latter functions illustrate that medium-sized trucks were not confined solely to the for-hire or private trucking business. Of the 6.5 billion vehicle-kilometres driven, about eight per cent were made empty.

The same cannot be said about the heavy truck fleet. Its use was dominated by the conventional goods-hauling role, with nearly 75 per cent of the vehicle-kilometres reported as being from carrying goods or equipment. Less than 10 per cent were for other work purposes and about 18 per cent of vehicle-kilometres were made empty.

**TABLE 7-7: TYPICAL USE OF CANADA'S MEDIUM AND HEAVY TRUCKS, 2001**

	Medium trucks		Heavy trucks	
	Vehicle-km (Thousands)	Share (Per cent)	Vehicle-km (Thousands)	Share (Per cent)
Carrying goods/ equipment	3,150	49	13,574	74
Empty	512	8	3,246	18
Other	2,793	43	1,612	9
Total	6,456	100	18,431	100

Source: Canadian Vehicle Survey, Statistics Canada and Transport Canada calculations

## TRUCK TRAFFIC BY SECTOR

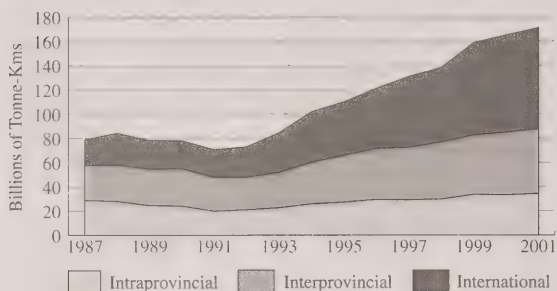
After a slowdown due to the 1990/91 recession, growth in for-hire trucking<sup>2</sup> traffic jumped from 70.6 to 170.9 billion tonne-kilometres from 1991 to 2001. The transborder sector dominated, with an average growth rate close to 14 per cent, more than twice the rate for domestic trucking activities, which was 6.3 per cent. The latter is a blend of intraprovincial and interprovincial activities, which grew at five per cent and almost seven per cent per year, respectively.

In terms of value, almost 65 per cent of Canada-U.S. trade moved by truck in 2001. Commodities shipped by truck from/to the United States amounted to \$363 billion, driven by exports at \$192 billion. Preliminary 2002 trade data show an increase of 2.3 per cent in the value of cargo carried by truck from/to the United States. A contributing factor to the strong transborder growth rate was a significant increase in the average distance travelled. In the last 15 years (1987 – 2001), the average distance travelled per trip by Canadian-domiciled trucks to and from the United States rose from 800 to 1,100 kilometres.

Figure 7-3 illustrates the growth of Canadian for-hire trucking traffic between 1987 and 2001. Table A7-8 in the Addendum provides the data in a tabular form.

2 Including Canadian domiciled long-distance for-hire trucking firms with annual operating revenues of \$1 million or more.

FIGURE 7-3: TOTAL FOR-HIRE TRUCKING TRAFFIC IN ANNUAL TONNE-KILOMETRES, 1987 – 2001



Note: For-hire trucking carriers with annual operating revenues of \$0.5 million or more (1988/89), and of \$1 million or more (1990 – 2001).

Source: Statistics Canada, *Trucking in Canada*, Cat. 53-222 and special tabulations

## COMMODITIES AND TRUCKING FLOWS

In 2001, domestic and transborder for-hire trucking traffic by Canadian firms generated revenues of \$7.9 billion and \$6.9 billion, respectively. Five groups of commodities represented close to 75 per cent of transport revenues: manufactured products, food products, forest products, metal and steel products, and automobile/transport products. In terms of volume (tonne-kilometres), the same five commodities also dominated in the same proportion (i.e. 75 per cent of the total).

Ontario dominated trucking traffic in all market segments, with 38 per cent of intraprovincial trucking traffic, 34 per cent of interprovincial trucking traffic and 44 per cent of total transborder traffic hauled by trucks. The heaviest traffic flows involved those between Ontario and the U.S. central region (17.1 billion tonne-kilometres) and Ontario and the U.S. southern region (10.5 billion tonne-kilometres). For additional information on volume and trucking flows, please see tables A7-9 to A7-11 in the Addendum.

## CANADA–U.S. BORDER CROSSING ACTIVITY

Heavy truck activity across the Canada–U.S. border rebounded slightly in 2002, growing two per cent from the 2001 level to reach 13.3 million two-way trips. Although a reversal of last year's decline, cross-border heavy truck activity was still off the 2000 peak of 13.6 million trips. This levelling off of activity can be attributed to the economic slowdown in the United States reducing demand for transportation. Car crossings were off nearly six per cent from last year to 64.2 million trips, the lowest level since 1987. For further details on border activity by border crossing, see tables A7-12 and A7-13 in the Addendum.

## PRICE, PRODUCTIVITY, FINANCIAL PERFORMANCE

### TRUCKING INDUSTRY

From 1996 to 2001, revenues for the trucking industry grew at an average annual rate of 8.6 per cent. From 1996 to 1999, trucking rates stayed basically the same. Following the 2000 fuel price hike, trucking rates increased by about 2.5 per cent each year in 2000 and 2001. Output rose at a robust annual rate of seven per cent between 1996 and 2001. The growth of transborder traffic in 2001 dropped to 4.6 per cent, much less than the double digit growth in previous years and reflective of the effects of the U.S. economic slowdown in 2001. Preliminary figures for 2002 indicate a softening of freight rates as a result of slower demand.

Total factor productivity in the trucking industry declined slightly (0.5 per cent) in 2001. Positive labour productivity gains were offset by increased capitalization, which could, however, be indicative of future productivity gains. Between 1996 and 2001, overall productivity growth reached 1.0 per cent per year, the same average annual increase observed in unit costs.

In 2001, as prices continued to increase more rapidly than unit costs, the average industry operating ratio improved, reaching 94 per cent — 95 per cent is indicative of viability. Large trucking carriers maintained their profitability in the first three quarters of 2002.

### URBAN TRANSIT SYSTEMS

In 2001, carriers' revenues (excluding subsidies) for urban transit services rose by 2.6 per cent, despite a drop in ridership. The decrease in ridership followed four consecutive years of growth. Transit prices increased by three per cent in 2001, or 1.8 per cent in real terms, a pace similar to long-term trends. The output of transit systems declined by 0.3 per cent. Between 1996 and 2001, prices increased by 2.3 per cent a year, while output grew by 2.5 per cent a year.

Transit systems remain the most labour- and capital-intensive of all transport industries, with a respective share of 50 and 30 per cent of total costs. The cost structure of the industry remained stable.

In 2001, total factor productivity of transit systems fell by 1.2 per cent. Only fuel efficiency increased. The 2.3 per cent decrease in labour productivity erased much of the gains made in previous years. The decrease of capital productivity, 0.8 per cent per year since 1996, corresponds to increased capital intensity. Transit costs per unit of output rose by 4.8 per cent. Unit cost increases were limited to 0.8 per cent a year, on average, from 1996 to 2001.

The total cost of transit systems was estimated at \$4.5 billion in 2001. After decreasing steadily since 1996, to 48 per cent in 2000, cost recovery decreased marginally in 2001. Annual operating subsidies rose to \$1.6 billion, \$100 million more than the average of the previous years. Capital subsidies were in line with the average levels of the mid-1990s.

Ontario continued to achieve the highest cost recovery, but only because it charged the highest fares (per kilometre) in Canada. Alberta and British Columbia had the lowest cost recovery, the former due to the lowest fares of all regions, the latter due to the highest unit costs in the country. In Quebec, the revenue shortfalls were smaller than the Canadian average, in spite of lower fares. Table 7-8 provides details on the performance of transit systems by region.

**TABLE 7-8: SELECTED PROVINCIAL SYSTEMS INDICATORS, 2001**

	<i>Quebec</i>	<i>Ontario</i>	<i>Alberta</i>	<i>B.C.</i>	<i>Canada</i>
Price levels (Canada = 100)	87.2	119.7	69.7	84.4	100.0
Total unit cost (Canada = 100)	99.8	104.9	87.4	107.2	100.0
Cost recovery (in %)	39.9	52.1	36.4	35.9	45.6
Revenue shortfall per passenger (\$)	1.56	1.54	2.03	2.51	1.65

*Source: Transport Canada, based on Statistics Canada and CUTA information*

For more information on the price, productivity and financial performance of the trucking industry and transit systems, see tables A2-61 to A2-64 in the Addendum.





*The decline in traffic volume handled at Canadian ports came from a drop in domestic marine cargo traffic and Canada's international marine trade traffic.*

## MAJOR EVENTS IN 2002

### LEGISLATIVE AND REGULATORY CHANGES AND INITIATIVES

#### BUNKERS CONVENTION

On September 27, 2002, Canada signed the new International Convention on Civil Liability for Bunker Oil Pollution Damage that was adopted in March 2001 under the auspices of the International Maritime Organization.

The Convention establishes the liability of the shipowner and compensation regime for spills of oil when carried as fuel in a ship's bunkers. It requires the registered owner of any ship over 1,000 gross registered tons to maintain insurance or other financial security in the event of an oil spill from the ship's bunkers.

#### 2002 PROTOCOL TO THE ATHENS CONVENTION

In October 2002, the International Maritime Organization held a diplomatic conference at which it adopted amendments to the Athens Convention Relating to the Carriage of Passengers and their Luggage by Sea, as amended by its 1990 Protocol (Athens Convention). Canada, through the *Marine Liability Act 2001*, has implemented the essence of the Athens Convention. The 2002 Protocol increased the limits of liability for loss of life or personal injury from 175,000 SDR<sup>1</sup> to 400,000 SDR. It also introduced a requirement for shipowners to maintain insurance or another financial instrument to cover their liability. To comply with the 2002 Protocol, some changes would be required to Canadian law.

#### MARINE LIABILITY ACT

On August 8, 2001, the Government of Canada brought the *Marine Liability Act* (MLA) into force under Chapter 6 of the Statutes of Canada. In September 2002, the *Marine Liability Act* regulations were enacted under Part 6 of the Act.

In 2002, Transport Canada released an independently prepared report which made recommendations on a future regime of compulsory insurance for vessels that carry passengers for commercial and public purposes, as per Section 39, Part 4 of the MLA. As a result, regulations are being developed to define such a regime.

#### CANADA MARINE ACT Review

As prescribed by legislation, the Government of Canada launched a review of the *Canada Marine Act* (CMA) in 2002 — to be completed during the fifth year following Royal Assent. On May 26, the Government announced the appointment of a four-member panel of industry experts to conduct the review. The Panel's primary role was to carry out consultations with stakeholders; hence in November, it completed an eleven-city, seven-province cross-Canada round of consultations. The Panel is to complete its report in time for the Minister of Transport to table his report in Parliament by June 2003.

The *Canada Marine Act* streamlined marine legislation related to services provided by the federal government in the marine sector, allowed the establishment of Canada Port Authorities and the continued divestiture of certain harbour beds and port facilities, facilitated the commercialization of the St. Lawrence Seaway, and contained provisions on further commercialization of federal ferry services and on pilotage authorities' operations.

1 Special Drawing Rights. Currently, 1 SDR = C\$2.00.

## NATIONAL MARINE CONFERENCE

The Minister of Transport, with the assistance of the Chamber of Maritime Commerce, hosted a National Marine Conference in May 2002 in Toronto, with the theme "From Vision to Reality — Charting the Course." A wide range of public and private decision-makers, as well as marine industry stakeholders, exchanged views on critical issues facing the Canadian marine industry, including safety and security, labour and skills, competitiveness, and infrastructure and technology.

## CANADA SHIPPING ACT, 2002

The *Canada Shipping Act* (CSA) received Royal Assent on November 1, 2001. The CSA 2001 requires a substantive body of regulations to be in place before the Act can be implemented. Consequently, regulatory reform is a strategic priority to put in place a modern regulatory framework promoting safe and secure marine transportation system.

This regulatory reform is proceeding in two phases. Phase one entails the reform of over 100 existing regulations into 30. Transport Canada is responsible for reviewing and consolidating approximately 50 regulations into 15 and Fisheries and Oceans Canada is to look after 15 regulations. Phase two will modernize the remaining regulations that are currently consistent with the new Act.

## INFRASTRUCTURE

### CANADA'S PORTS AND HARBOURS SYSTEM

Canada's ports and harbours play a crucial role in linking economic activities to markets that otherwise would not be accessible. Canada's major ports are vital gateways in the national transportation system, being linked to the rail and road network.

Canada's ports system began a process of reorganization in December 1995, following the announcement of the National Marine Policy. The federal government has since been moving out of the direct operation of ports and is transferring greater control over the provision of port services to local users. The National Marine Policy, which has been implemented through the *Canada Marine Act*, calls for three categories of ports: (1) Canada Port Authorities (CPAs), (2) regional/local ports and (3) remote ports.

The majority of ports under the control and administration of Transport Canada are designated as regional/local. These ports range from operations that support significant local and regional commercial activity to very small facilities with little or no commercial traffic. As part of the reorganization process, many of these ports have been transferred to other federal departments, provincial governments, municipal authorities, community organizations or private interests.

The National Marine Policy's objective of terminating the government's operational and ownership interests in regional/local ports, originally scheduled to end on March 31, 2002, has been extended by Cabinet. Many of the ports serving as the primary transportation portals for isolated communities are designated as remote ports and will remain under the control and administration of Transport Canada, unless local stakeholders express a willingness to assume ownership of such port facilities.

Of the 549 public ports and port facilities originally under Transport Canada's control and administration before the National Marine Policy came into force, 436 have been transferred, deproclaimed or demolished, or have had Transport Canada's interests terminated. As of December 31, 2002, 113 regional/local and remote ports and port facilities remained under Transport Canada control. Of the remaining ports and port facilities, there are 19 sites where facilities have been transferred yet cannot be deproclaimed because the harbour bed has not yet been divested. For detailed port information, see tables A8-1 and A8-2 in the Addendum.

Table 8-1 summarizes the classification of ports as of December 31, 2002.

As of December 31, 2002, 204 public ports and public port facilities have been transferred: 64 sites were transferred to other federal departments, 40 to provincial governments, and 100 to local interests. In addition, 21 sites have either been demolished or have had Transport Canada's interest terminated (through lease or licence terminations).

On the whole, 265 public ports have been deproclaimed, 28 of which were adjacent to port facilities already transferred. Archival research identified 26 harbours in addition to the original 549 port sites identified in the National Marine Policy.

While no remote ports were divested in 2002, 27 remote ports have been divested since 1996. As a result, Transport Canada continues to administer 34 remote ports nation-wide (10 in Quebec, three in Ontario, one in Manitoba and 20 in British Columbia).

TABLE 8-1: PORT CLASSIFICATIONS AS OF DECEMBER 31, 2002

	<i>Federal</i>	<i>Provincial</i>	<i>Municipal</i>	<i>Private</i>	<i>Total</i>
<b>Federal Agency Ports</b>					
Canada Port Authorities	19	N/A	N/A	N/A	<b>19</b>
Harbour Commissions	1	N/A	N/A	N/A	<b>1</b>
<b>Ports Operated by Transport Canada</b>					
Regional/Local	79	N/A	N/A	N/A	<b>79</b>
Remote	34	N/A	N/A	N/A	<b>34</b>
<b>Ports Transferred<sup>1</sup></b>					
From Transport Canada	64	40	56	44	<b>204</b>
<b>Status of other former Transport Canada Ports</b>					
Demolished	3	N/A	N/A	N/A	<b>3</b>
Interests terminated	18	N/A	N/A	N/A	<b>18</b>
Deproclaimed	211	N/A	N/A	N/A	<b>211</b>
<b>Other Ports in Operations</b>		4	2	33	<b>39</b>

<sup>1</sup> Includes 22 sites where facilities have been transferred, but harbour bed has not yet been deproclaimed and 64 sites that were transferred to the Department of Fisheries and Oceans. Note: Additional detailed information on ports is presented in tables A8-1 and A8-2 in the Addendum, including a summary of the provincial distribution of the ports administered by Transport Canada from 1995 to 2002, a summary of the divestiture status of regional/local and remote ports on a regional basis. N/A = Not available.

Source: Transport Canada

At the end of 2002, there were 164 "other" ports in Canada, including 82 private, 41 provincial and 41 municipal ports. These include sites such as Port Cartier, Quebec, and Nanticoke, Ontario, used to ship large volumes of cargo; and Quyon, Quebec, used for an interprovincial ferry service on the Ottawa River.

The National Ports System, created under the *Canada Marine Act*, is made up of 19 independently managed Canada Port Authorities, which are financially self-sufficient ports critical to domestic and international trade. The 19 CPAs are Fraser River, Vancouver, North Fraser, Nanaimo, Prince Rupert, Port Alberni, Thunder Bay, Windsor, Toronto, Hamilton, Montreal, Quebec City, Trois-Rivières, Saguenay, Sept-Îles, Saint John, St. John's, Belledune and Halifax. They include former Ports Canada local port corporations, former Canada Ports Corporation's major divisional ports, and former harbour commissions. Once a number of land issues have been resolved, the Port of Oshawa is expected to complete the letters patent process and receive CPA status.

The operational role of the federal government in Canada's National Ports System is to enforce regulations for public port and public port facility use, monitor port operations, and collect user fees. Port services, such as cargo handling, are supplied by the private sector.

## FINANCIAL PERFORMANCE

Because audited financial statements of Canada Port Authorities for 2002 were not available for this report, results for 2001 were used. It should also be noted that some 2000 figures have been restated to reflect changes

in accounting policies as was reported in the 2001 audited financial statements. For detailed financial information, see Addendum tables A8-3 to A8-5.

Total operating revenues of CPAs jumped from \$257 million in 2000 to more than \$270 million in 2001, while expenditures rose by \$7.3 million, which is partly attributable to Hamilton gaining CPA status in 2001. In comparing the same CPAs in 2000 and 2001, revenues increased from approximately \$250 million to \$257 million, a three per cent increase. Vancouver and Montreal accounted for approximately 57 per cent of total revenues generated. Eight of the 19 CPAs reported an increase in revenues ranging from \$0.04 million to \$5.7 million, while 10 reported decreases in expenditures ranging from \$0.1 million to \$1.9 million.

In terms of revenues, Vancouver and Belledune reported the highest increases, at \$5.7 million (6.1 per cent) and \$3.3 million (56 per cent), respectively. Belledune's was the largest percentage increase. In terms of expenditures, nine ports reported increases ranging from \$0.16 million to \$4.62 million, for a combined increase of \$13.5 million. The net effect at all CPAs was a total increase in expenditures in 2001 of \$7.3 million, from \$216 million in 2000 to \$223 million in 2001.

The overall operating ratio for the CPAs was approximately 83 per cent in 2001, with the individual ratios ranging from 40 to 145 per cent. The return on assets was four per cent in 2001. Saguenay had the highest return on assets (29.8 per cent), followed by Trois-Rivières (17.7 per cent) and North Fraser (16.7 per cent).



For CPA ports, net income increased by \$23.1 million in 2001. In contrast, 10 of the 19 ports reported increases ranging from \$0.07 million to \$15.27 million, for a combined increase of \$28 million. The 9 ports that reported a decrease in net income had a combined loss of \$5 million, with ranges from \$0.04 million to \$1.93 million. Prince Rupert's increase in net income from minus \$14.7 million in 2000 to plus \$0.6 million in 2001 can be attributed to a \$15.2 million write-down in the 2000 fiscal year on certain capital assets whose net recoverable value was less than the recorded carrying value.

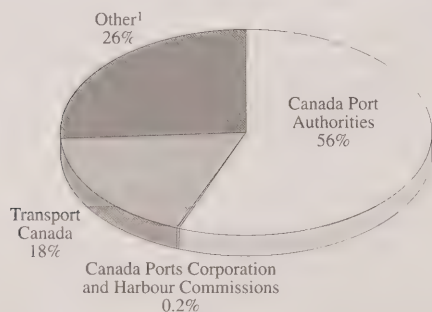
Tonnage for the CPA ports decreased from 226 million tonnes in 2000 to 219.9 million tonnes in 2001. Four CPAs accounted for 62 per cent of total cargo, by volume: Vancouver (33 per cent), Sept-Îles (10 per cent), Saint John (11 per cent) and Montreal (9 per cent). The revenue per tonne increased from \$1.17 in 2000 to \$1.23, while expenses per tonne increased from \$0.96 to \$1.02.

At ports still under Transport Canada's control, gross revenues in fiscal year 2001/02 were \$13.8 million and expenses were \$23.6 million. This left an operating revenue shortfall of \$9.8 million and an operating ratio of 171 per cent. Capital expenditures for the year were \$6.8 million, and \$23.1 million was expended in grants and contributions for costs related to transfers associated with port divestitures. Addendum Table A8-6 provides details.

## PORT TRAFFIC

Based on preliminary data provided by Statistics Canada (available only up to 2001), Canada's ports handled 393 million tonnes of cargo in 2001, a decrease of approximately 2.4 per cent from 2000.

FIGURE 8-1: TRAFFIC SHARES BY PORT GROUPS, 2001



<sup>1</sup> Includes the Department of Fisheries and Oceans Canada, provincial and municipal governments and private facilities.

Source: Transport Canada

Figure 8-1 shows traffic shares by port groups in 2001, based on port classification as of December 31, 2001.

The following data show the actual traffic (cargo handled) at some Canada Port Authorities in 2001: Halifax, 13.9 million tonnes; Montreal, 18.9 million tonnes; Prince Rupert, 4.7 million tonnes; Quebec, 15.3 million tonnes; Saguenay, 0.411 million tonnes; Saint John, 24.5 million tonnes; Sept-Îles, 20.9 million tonnes; Thunder Bay, 9.0 million tonnes; Toronto, 1.8 million tonnes; Vancouver, 71.7 million tonnes; and Fraser River, 11.4 million tonnes.

In 2001, CPAs handled the largest amount of port traffic, with a 56 per cent share of the total. The ports still classified as divisional ports of the Canada Ports Corporation or as Harbour Commissions as of December 31, 2001, transported less than one per cent of the total traffic, while Transport Canada facilities moved 18 per cent of the total cargo. The remaining 26 per cent was handled by other facilities, including those managed privately and those managed by or on behalf of the Department of Fisheries and Oceans and provincial and municipal governments.

At those declared public ports where Transport Canada has no facilities and cargo is transported across private wharves, cargo shipments totalled 31 million tonnes, or 43 per cent of the total traffic handled by Transport Canada ports. Approximately 100 million tonnes of cargo crossed the "other" ports. In this category, Nanticoke, Ontario, with approximately 15.5 million tonnes, handled the most cargo, followed by Port Cartier, Quebec, which carried 14.8 million tonnes. The remaining 153 ports that reported cargo tonnage to Statistics Canada carried the balance of cargo. (See Addendum Table A8-7.)

## SMALL CRAFT HARBOURS

The Department of Fisheries and Oceans Canada (DFO) continues to divest recreational harbours and derelict/low-activity fishing harbours. At the end of the disposal exercise, all recreational harbours will have been transferred, and the number of fishing harbours under DFO responsibility could be as low as 750.

## Fishing harbours

Since the late 1980s, a DFO program has supported the creation of local harbour authorities to manage the commercial fishing harbours in their communities. Harbour authorities are local, non-profit organizations made up of fishermen and other harbour users that lease the harbour from DFO. The harbour authorities provide services, maintenance and harbour management. As of January 3, 2003, harbour authorities managed 654 sites across Canada, more than 85 per cent of the DFO program target. Fishing harbours not generating enough community interest to form a harbour authority will be divested or, if necessary, demolished. Such harbours are

usually low- or no-activity and have a negligible impact on the commercial fishing industry or the community at large. To date, 261 have been divested and 74 are in the final stage of divestiture.

Table 8-2 shows the number of fishing harbours remaining in the DFO portfolio as of January 3, 2003, by management type and region.

**TABLE 8-2: DFO FISHING HARBOURS BY MANAGEMENT TYPE AND REGION, AS OF JANUARY 3, 2003**

	Harbour Authorities	Small Craft Harbours	Total by Region
British Columbia <sup>1</sup> and the Yukon <sup>2</sup>	73	77	150
Central and Arctic <sup>2</sup>	27	40	67
Quebec	54	34	88
Maritimes and Gulf	284	63	347
Newfoundland and Labrador	216	163	379
<b>Total</b>	<b>654</b>	<b>377</b>	<b>1,031</b>

1 Totals include 47 mooring buoy sites in British Columbia.

2 There are no Harbour Authorities in Saskatchewan, the Northwest Territories, Nunavut or the Yukon.

Source: Department of Fisheries and Oceans

## Recreational Harbours

The DFO program intends to divest all recreational harbours in its inventory. Since 1994/95, it has either transferred or is in the final stage of divesting 633 recreational harbours — 75 per cent of its target. Municipalities, local non-profit organizations, First Nations or other federal departments are the main recipients of these harbours. If no public body is interested in acquiring the facilities, the facilities are offered at market value. As a last resort, if there is neither public nor private interest in them, they are demolished. The recreational harbour divestiture program is expected to continue for several more years.

Tables 8-3 to 8-8 summarize, by region, the status of the DFO recreational harbour divestiture program (Table 8-3), recipients of harbours divested (Table 8-4) and type of management of the remaining harbour sites in the small craft harbour inventory (Table 8-5).

**TABLE 8-4: RECIPIENTS OF DIVESTED DFO RECREATIONAL HARBOURS, AS OF JANUARY 3, 2003**

	Province <sup>1</sup>	Municipality	Private Sector	Other <sup>2</sup>	Total by Region
British Columbia and the Yukon	54	0	0	0	54
Central and Arctic	25	205	21	32	283
Quebec	3	185	3	25	216
Maritimes and Gulf	6	19	4	50	79
Newfoundland and Labrador	0	1	0	0	1
<b>Total</b>	<b>88</b>	<b>410</b>	<b>28</b>	<b>107</b>	<b>633</b>

1 Just over half these properties were subject to provincial reversionary interests and were therefore returned by DFO to the province.

2 "Other" refers to sites that have been transferred to local non-profit organizations, First Nations or other federal departments, as appropriate.

3 Number of harbours transferred or in the final stage of transfer as of January 3, 2003

Source: Department of Fisheries and Oceans

**TABLE 8-5: DFO RECREATIONAL HARBOURS BY MANAGEMENT TYPE, AS OF JANUARY 3, 2003**

	Managed Under Lease	Small Craft Harbours	Other <sup>1</sup>	Total by Region
British Columbia and the Yukon	1	0	9	10
Central and Arctic	110	42	12	164
Quebec	3	29	4	36
Maritimes and Gulf	0	1	0	1
Newfoundland and Labrador	0	1	0	1
<b>Total</b>	<b>114</b>	<b>73</b>	<b>25</b>	<b>212</b>

1 "Other" refers to a variety of management and non-management situations. Some construction works, such as shoreline reinforcement or breakwaters, are largely stable and do not require ongoing management. Some facilities are part of a larger development (i.e. a marina) and are managed as part of that development. In other cases, facilities no longer exist at the site and there is nothing to manage.

2 Remaining recreational harbours in small craft harbours inventory as of January 3, 2003

Source: Department of Fisheries and Oceans

## MARINE PILOTAGE

In Canada, four regional pilotage authorities offer safe and efficient pilotage services: Atlantic (APA), Laurentian (LPA), Great Lakes (GLPA) and Pacific (PPA). They direct and control the navigation and/or ship handling of a vessel through coastal and inland waterways. Each pilotage authority responds to the particular requirements of marine traffic and to the geographic and climatic conditions of the waterways in its region.

**TABLE 8-3: DFO RECREATIONAL HARBOURS DIVESTED BY REGION, AS OF JANUARY 3, 2003**

	Fully Divested 1995/2002	Fully Divested 2002/03	Final Stage of Divestiture	Total Divested	Remainder to be divested	Regional Total
British Columbia and the Yukon	48	3	3	54	10	64
Central and Arctic	256	8	19	283	164	447
Quebec	179	9	28	216	36	252
Maritimes and Gulf	76	1	2	79	1	80
Newfoundland and Labrador	0	0	1	1	1	2
<b>Total</b>	<b>559</b>	<b>21</b>	<b>53</b>	<b>633</b>	<b>212</b>	<b>845</b>

Source: Department of Fisheries and Oceans

As Table 8-6 shows, three of the four pilotage authorities managed to generate enough revenues to cover their expenses in 2002. The results for 2002 represent a return toward a positive net income over the recent downward trend of 2000 and 2001.

**TABLE 8-6: PILOTAGE AUTHORITY FINANCIAL RESULTS, 2002**

(Millions of dollars)

<i>Pilotage Authority</i>	<i>Revenues</i>	<i>Expenditures</i>	<i>Net Income (Loss)</i>
Atlantic Pilotage Authority (APA)	14,241	13,989	252
Laurentian Pilotage Authority (LPA)	46,734	46,322	412
Great Lakes Pilotage Authority (GLPA)	13,289	14,850	(1,561)
Pacific Pilotage Authority (PPA)	40,590	39,968	622
<b>Total Pilotage Authorities</b>	<b>114,854</b>	<b>115,129</b>	<b>(275)</b>

Source: Pilotage Authorities' Annual Reports (2002 preliminary)

The average number of assignments per pilot is commonly used to measure the efficiency of pilotage services. Based on this measure, efficiency increased between 1996 and 1998 but declined afterward. Table 8-7 shows the number of assignments for each pilotage authority and the total for all pilotage authorities in 2002. (For information on other years, see Table A8-8 in the Addendum.). The variations among the authorities and from one year to another are related to traffic levels. Assignments in different regions and in different areas of the same region (e.g. the Atlantic region) require various times to complete and may be vastly different from one another. Overall, there were slightly more total assignments in 2002 than in 2001.

**TABLE 8-7 TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 2002**

<i>Pilotage Authority</i>	<i>Indicators</i>	<i>2002</i>
Atlantic (APA)	Total Assignments	11,804
	Assignments Per Pilot	231
Laurentian (LPA)	Total Assignments	19,149
	Assignments Per Pilot	111
Great Lakes (GLPA)	Total Assignments	7,510
	Assignments Per Pilot	119
Pacific (PPA)	Total Assignments	12,655
	Assignments Per Pilot	116
<b>Total All Authorities</b>	<b>Total Assignments</b>	<b>51,118</b>
	<b>Assignments Per Pilot</b>	<b>129</b>

Source: Pilotage Authorities' 2002 draft annual reports

## CANADIAN COAST GUARD

The Canadian Coast Guard (CCG) is an integral part of the Department of Fisheries and Oceans. In 2002, the CCG celebrated its 40th anniversary as a national institution. The CCG ensures safe and environmentally responsible use of Canada's waters; facilitates the use of Canadian waters for shipping, recreation and fishing; and provides marine expertise in support of Canada's domestic and international interests.

The CCG's clients include commercial shipping interests; recreational boaters; the fishing industry; ferry services; tug and barge resupply operations in the North; cruise lines; private-sector shippers; provincial, municipal and territorial governments; and federal government departments. The CCG plays a key role in maintaining maritime safety, protecting the marine and freshwater environment, and facilitating maritime commerce and ocean development. The CCG also plays a supportive role in managing and protecting fisheries resources and in understanding oceans and aquatic resources.

The CCG's Marine Navigation Services provides, operates and maintains a system of navigation aids; ensures safe shipping channels; protects the public right to navigation; and protects the environment.

The Marine Communication and Traffic Services provides distress and safety communications and coordination; ensures vessel screening to prevent entry of unsafe vessels into Canadian waters; regulates vessel traffic movements; and manages an integrated system of marine information and public correspondence services. It also supports economic activities by optimizing traffic movements and port efficiency, and facilitating industry ship-shore communications.

The Icebreaking Operations provides icebreaking escorts, channel maintenance, flood control, harbour breakouts, and ice-routing and information services for marine traffic navigating through or around ice-covered waters. The icebreaking program has moved to a more client-focused, demand-driven service. As a result, commercial users now pay a percentage of the allocated costs in the form of an icebreaking service fee.

The Rescue, Safety and Environmental Response activities include maritime search and rescue; environmental response; and operation of the office of boating safety by regulating recreational boaters, recreational boats and recreational boating activities.



Within the CCG, the sea and air support activities to all CCG functions, including to other government departments, is done under the Fleet Management Business Line. In 2002, a fleet management renewal initiative was created to respond to issues raised by the Auditor General. Fleet recapitalization is another initiative launched to review fleet requirements to maintain current base fleet capacity.

In recent years, the Coast Guard has implemented three fees for commercial users of specific programs: the marine navigation service fee, in June 1996; a transit-based icebreaking services fee, in 1998; and a maintenance dredging services tonnage fee, in September 1997. Table 8-8 shows the Coast Guard's financial results for fiscal year 2002/03.

For more information on the CCG functions, visit [www.ccg-gcc.gc.ca](http://www.ccg-gcc.gc.ca).

**TABLE 8-8: CANADIAN COAST GUARD REVENUES AND BUDGETED EXPENDITURES, 2002/03**

(Millions of dollars)

	<i>Revenues</i>	<i>Gross expenditures</i>	<i>Net Expenditures</i>
CCG Total	43.4	503.0	459.6
MNS	29.4	109.7	80.3
MCTS	0.1	69.2	69.1
ICE	13.8	55.7	41.9
RSER	0.1	126.1	126.0
Fleet Mgmt	0.0	142.3	142.3

Notes: MNS: Marine Navigation Services; MCTS: Marine Communication and Traffic Services; ICE: Icebreaking Services; RSER: Rescue, Safety and Environmental Response; CCG: Canadian Coast Guard.

Source: Department of Fisheries and Oceans

## ST. LAWRENCE SEAWAY

The St. Lawrence Seaway is a unique inland waterway that extends into the industrial heartland of North America and serves 15 major international ports and some 50 regional ports on both sides of the Canada-U.S. border.

The Seaway is divided into two main sections: the Montreal-Lake Ontario (MLO) section and the Welland Canal section. The MLO section runs from Montreal to Lake Ontario and contains seven locks over 300 kilometres, five in Canada and two in the United States. The Welland Canal section runs from Lake Ontario to Lake Erie and contains eight locks over 42 kilometres.

For the Canadian portion of the St. Lawrence Seaway, 2002 was the fourth full year of management by the St. Lawrence Seaway Management Corporation (SLSMC), a not-for-profit corporation established by Seaway users and other interested parties. Under the SLSMC's management contract with the federal government, which

expires on March 31, 2018, the Corporation manages, operates and maintains the Seaway in accordance with a Management, Operation and Maintenance Agreement. The SLSMC is also required to submit five-year business plans to the Minister of Transport that include anticipated revenues and operating costs and an "Asset Renewal Plan." The Corporation is authorized to charge tolls and other revenues to finance the operation and maintenance of the Seaway, and to recover additional funds from the Government of Canada to eliminate operating deficits, when required.

During the 2002 season, estimated combined traffic on the two sections of the Seaway was approximately 41.1 million tonnes, 1.4 per cent lower than in 2001. Iron ore took first place this year among commodity shipments, with 9.6 million metric tonnes, up 11.4 per cent. Grain continued its downward trend with a 12.8 per cent drop in volume carried. Other commodities associated with the steel industry and other bulk cargo declined by approximately five per cent. Tables 8-9 and 8-10 show cargo movements and traffic by commodities, respectively, for 2001 and 2002. For a longer time series, see tables A8-9 and A8-10 in the Addendum.

**TABLE 8-9: ST. LAWRENCE SEAWAY CARGO MOVEMENTS, 2001 AND 2002**

(Thousands of tonnes)

<i>Year</i>	<i>Montreal-Lake Ontario Section</i>	<i>Welland Canal Section</i>
2001	30,278	32,485
2002 (estimated)	29,845	31,785

Source: St. Lawrence Seaway Management Corporation

**TABLE 8-10: ST. LAWRENCE SEAWAY TRAFFIC BY COMMODITY, 2001 AND 2002**

(Thousands of tonnes)

<i>Year</i>	<i>Grain</i>	<i>Iron Ore</i>	<i>General Cargo</i>	<i>Coal</i>	<i>Other</i>	<i>Total</i>
2001	11,792	8,657	3,005	4,804	13,447	41,705
2002 <sup>1</sup>	10,292	9,641	4,215	4,159	12,810	41,117

Note: Combined traffic in the two sections of the Seaway  
1 2002 figures are estimated.

Source: St. Lawrence Seaway Management Corporation

## RATES AND TARIFFS

As part of the negotiated agreement with Seaway users, the SLSMC implemented a two per cent toll increase for the Canadian section of the Seaway in 2002. However, the Corporation was able to apply a 1.5 per cent toll rebate for the 2002 season because its expenditures were lower than business plan targets for the fourth year in a row and because it was able to increase the balance of its notional reserve account to \$12.1 million as of March 31, 2002.



## FINANCIAL PROFILE

In fiscal year 2001/02, Seaway revenues from tolls and other sources were \$64.5 million, compared with \$76.0 million in 2000/01. Toll revenues fell to \$62.0 million, a substantial drop from the \$73.4 million in 2000/01. This reflected the economic slowdown in the United States and Canada.

Operating expenses were \$53.2 million, a slight decrease from the previous year. Salaries, wages and benefits accounted for 84.9 per cent of this total. The asset renewal program totalled \$24.5 million in 2001/02, down from \$25.1 million in the previous year.

Table 8-11 compares the financial performance of the St. Lawrence Seaway from 1999/2000 to 2001/02.

**TABLE 8-11: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1999/2000 TO 2001/02**

(Thousands of dollars)

Year	Revenues	Expenditures	Excess of revenue over expenses	Net Excess of revenue over expenses <sup>1</sup>
1999/2000	76,026	75,156	870	630
2000/01	76,031	80,045	(4,014)	(1,821)
2001/02 (April 2001 to March 2002)	64,495	79,120	(14,625)	(2,118)

<sup>1</sup> Following contribution from Capital Trust Fund.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

## INDUSTRY STRUCTURE

Canada's marine industry includes a fleet of Canadian-flag operators providing domestic and transborder shipping services, while international trade is served largely by foreign-flag operators calling at Canada's major ports.

## DOMESTIC SERVICES

The Canadian merchant fleet carries the majority of domestic shipments of bulk materials on the Great Lakes and along Canada's coastline. The fleet is defined here as self-propelled vessels of 1,000 gross tons<sup>2</sup> and over flying the Canadian flag. At the end of 2002, it stood at 183 vessels and more than 2.3 million gross tons.

Dry bulk carriers remain the backbone of the Canadian merchant fleet, accounting for 50 per cent of tonnage and 36 per cent of vessels in 2002. The dry bulk fleet was made up of 65 vessels in 2002, composed of straight-deck bulkers dedicated mainly to grain transportation and self-unloading vessels carrying various bulk commodities. By comparison, the number of tankers decreased from 41 in 1982 to 24 in 2002, while their capacity share increased from 11 to 24 per cent of total gross tonnage, due to the addition of larger units.

An extensive fleet of tugs and barges was also in operation at the domestic and international level. In 2002, the Canadian Transportation Agency estimated that the Canadian fleet of tugs and barges included 325 tugs (117,000 gross tons) and 1,236 barges and scows (almost 1.2 million gross tons).

Table 8-12 shows the transport capacity of the Canadian-registered fleet by type of vessel in 1982, 1992 and 2002.

**TABLE 8-12: CANADIAN-REGISTERED FLEET BY TYPE, 1982, 1992 AND 2002**

Type of Carriers	Gross Tons (Thousands of tons)			Number of Vessels		
	1982	1992	2002	1982	1992	2002
Dry bulk	1,967	1,380	1,165	133	79	65
Tankers	285	244	559	41	33	24
General cargo	81	79	206	21	14	27
Ferries	258	295	365	56	56	61
Other	73	35	35	13	8	6
<b>Total</b>	<b>2,665</b>	<b>2,033</b>	<b>2,330</b>	<b>263</b>	<b>190</b>	<b>183</b>

Note: Self-propelled vessels of 1,000 gross tons and over, including government owned ferries.

Source: Canadian Transportation Agency and Transport Canada

## EASTERN CANADA

A fleet of dry bulk vessels (straight-deck and self-unloaders), tankers, general cargo and other vessels provides freight services in eastern Canada, including the Arctic. Algoma Central Corporation, Upper Lakes Group and Canada Steamship Lines are the three largest operators in the Great Lakes–St. Lawrence region.

In 2002, Canada Steamship Lines acquired the three remaining operational bulk vessels of N.M. Paterson & Sons Limited, as Paterson withdrew from shipping operations on the Great Lakes. This continued the trend toward consolidation in the domestic Great Lakes fleet.

<sup>2</sup> Gross tonnage is the capacity in cubic feet of the spaces within the hull and of the enclosed spaces above the deck of a vessel, divided by 100. Thus 100 cubic feet of capacity is equivalent to one gross ton. However, capacity of a cargo carrying ship can also be expressed as deadweight in tonnes (1000 kg) required to immerse the hull at a particular draught (usually the maximum summer draught).

## WESTERN CANADA

On the West Coast, domestic marine cargo services are provided by a large tug and barge fleet. Most of the operators concentrate on the domestic trades but some also trade internationally between Canadian and U.S. ports.

The Washington Marine Group, owned by Montana businessman Dennis Washington, controls several of the largest tug and barge operations, including Seaspan International Ltd., the largest Canadian tug and barge operator on the West Coast; Cates Tugs; Norsk; and Kingcome Navigation Company, formerly owned by MacMillan Bloedel. Rivtow Marine Ltd. is the second-ranked tugboat company in British Columbia.

## NORTHERN CANADA

In the Western Arctic, Northern Transportation Company Limited (NTCL) is the principal marine operator in Northern Canada for the area encompassing the Mackenzie River Watershed and the Arctic coast and islands. Its operations cover the Mackenzie River, the Western Arctic, Alaska and Great Slave Lake. NTCL handles bulk petroleum products and dry cargo for communities, defence installations and gas exploration sites across the North. It also provides tug and barge operations from the Port of Churchill to service communities in what is now the Kivalliq region of Nunavut.

In the Eastern Arctic, the Government of Nunavut now has responsibility for the Arctic Sealift. The N3 Alliance was awarded a two-year contract for 2001/02 covering all aspects of the Sealift. The N3 Alliance is a joint venture between NTCL, Nortran Inc. and Nunavut Sealink and Supply Inc. (NSSI).

In addition to the Arctic Sealift to the Baffin Region of Nunavut and the NTCL service to the Kivalliq Region out of Churchill, resupply services to the Nunavik Region are managed by the Quebec Ministry of Transportation, and the James and Hudson Bay Cree are served out of Mooseneey (cargo originates in the Toronto region).

Mines such as Polaris and Nanisivik also have vessels calling with supplies inbound and carrying zinc and lead concentrates to world markets outbound. Fednav, the owner of the *MV Arctic*, is active in this market.

## INTERNATIONAL SERVICES

International marine freight transport can be broken down into bulk and liner shipping.

Bulk shipping pertains to marine freight carried as single cargoes and in large volume. Canadian cargoes carried as bulk include coal, iron ore and potash.

The bulk freight industry operates in a competitive market composed of time charters (term contracts) and "spot" or "tramp" carriers that operate on the basis of short-term contracts for a specified number of voyages or days or for a given quantity of cargo. Most of Canada's international bulk trade is carried under time charter arrangements on foreign-flagged ships.

Liner shipping pertains to the carriage of high-value containerized cargo moved under published rates and on specific fixed itinerary trade routes.

The international liner trade is dominated by large fleets of specialized container vessels operating on major trade routes around the world. The majority of the Canadian-controlled international fleet operates under foreign flags and employs foreign officers and crews. Shipping lines calling at Canadian ports may provide conference or non-conference liner services. Ocean carriers (i.e. individual lines) providing liner services on a common trade route often elect to form a shipping conference and to adhere to rates and/or conditions of service under a conference agreement. Such practices are exempted from certain provisions of the *Competition Act* by the *Shipping Conferences Exemption Act* (SCEA).

Independent shipping lines, referred to as non-conference carriers, offer rates and services that are comparable with those of conference operators and contribute to a competitive international shipping industry. A shipping line may choose to be a conference member on certain routes and an independent operator on others.

## SERVICES AVAILABLE TO CANADIAN SHIPPERS

In 2002, the Canadian Transportation Agency had 14 shipping conference agreements on file, 12 with filed tariffs and 2 non-tariff filing arrangements.

Five of the conferences operate between Eastern Canada, Northern Europe and the Mediterranean. Atlantic Container Line, Canada Maritime Ltd., Hapag-Lloyd Container Line, P&O Nedlloyd, MITSUI O.S.K. Lines and Orient Overseas Container Lines are some of the major lines serving Canada as conference members.

Table 8-13 lists the 12 tariff-filing Conference Agreements.

**TABLE 8-13: SHIPPING CONFERENCES SERVING CANADA IN 2002**

1. Canadian Continental Eastbound Freight Conference (E)
2. Canada–United Kingdom Freight Conference (E)
3. Continental Canadian Westbound Freight Conference (E)
4. Australia–Canada Container Line Association (E & W)
5. Mediterranean Canadian Freight Conference (E)
6. Canada/Australia–New Zealand Association Carriers (CANZAC) (E & W)
7. New Zealand–Canada Container Lines Association (E & W)
8. Canada Transpacific Stabilization Agreement (E & W)
9. Mediterranean North Pacific Coast Freight Conference (Canada) (W)
10. Canada/Australia–New Zealand Discussion Agreement (E & W)
11. Canada North Atlantic Westbound Freight Conference (E)
12. Canada Westbound Transpacific Stabilization Agreement (E)

Notes: E = East Coast; W = West Coast

Source: Canadian Transportation Agency

Shippers benefit not only from competition between conference and non-conference carriers but also within conferences through the independent action provision contained in the *Shipping Conferences Exemption Act* (SCEA). The provision permits individual conference lines to offer a rate, or services, different from those found in the conference tariff. Under the 2001 SCEA, an independent action by a conference line can take effect after 5 days of notice, as opposed to 15 in the old Act.

Also under the 2001 SCEA, an individual conference line is allowed to sign service contracts with shippers without disclosing the contract terms and conditions to the conference. A conference and a shipper may also negotiate and sign conference-wide service contracts. These contracts are confidential, but to comply with SCEA they must be filed with the Canadian Transportation Agency.

In 2002, the Canadian Transportation Agency accepted filings for 51 service contracts,<sup>3</sup> 47 fewer than in 2001. The contracts applied to both inbound and outbound traffic and to origins and destinations on both the east and west coasts of Canada. The average duration of the contracts was one year.

## PASSENGER TRANSPORTATION

### FERRY SERVICES

The Canadian Ferry Operators Association (CFOA) counts most major ferry operators in Canada as members. When it comes to ferry services in Canada, wide differences in services, ownership and vessel type

used are observed. Ownership ranges from small, private operators to provincial governments and federal Crown corporations. Ferry companies, municipalities, private companies and federal and provincial governments also own, lease and operate terminals and docking facilities. Vessel types vary from small cable ferries to large cruise-type vessels and fast ferries, and operations range from seasonal to year-round service.

For details on the major ferry services, see Addendum Table A8-11. Most major ferry services have their own Web sites, routes and rates.

Traffic figures for 2002 for all members of the CFOA are not yet available. The traffic figures for 2001, however, are a good indication of the relative size of CFOA operations. Total passenger traffic is estimated at over 40 million passengers and 17 million vehicles. This represents approximately 15 per cent of total worldwide ferry traffic.

The British Columbia Ferry Corporation is by far the largest operator in Canada. In 2001, it carried approximately 21.5 million passengers and 7.9 million vehicles. Inland ferry services are also operated by British Columbia's Ministry of Transportation and Highways and Fraser River Marine Transportation; they carried another 6.6 million passengers and 3 million vehicles. In Quebec, La Société des traversiers du Québec carried 5.4 million passengers and 2.5 million vehicles.

In 2002, the federal Crown corporation Marine Atlantic Inc. increased its traffic to a record 512,000 passengers and 245,000 vehicles between Newfoundland and Labrador and Nova Scotia. Private ferry operators subsidized by the federal government also increased their overall traffic and in 2002 carried approximately 950,000 passengers and 340,000 vehicles. The remaining CFOA members, including provincial operations in Newfoundland and Labrador, Manitoba, Ontario and New Brunswick, accounted for approximately 4 million passengers and 1.8 million vehicle crossings.

Federally supported ferry services in Atlantic Canada are now limited to those provided by Marine Atlantic Inc. and two private-sector operators, Northumberland Ferries Ltd. and C.T.M.A. Traversier Ltée. In addition, the federal government provides an annual grant to the Province of British Columbia, which is directed to BC Ferries.

3 Service contracts are pro-competitive provisions designed to maintain Canadian conference legislation in balance with Canada's major trading partners and support the recent trend toward a greater reliance on the marketplace.



## CRUISE SHIP INDUSTRY

The large cruise vessels calling at Canada's ports are owned by foreign-based companies and fly foreign flags. These vessels offer two basic types of extended cruises, the luxury cruise and the pocket cruise, which are distinguished by vessel capacity of more or less than 150 passengers.

Alaska cruises through British Columbia's scenic Inside Passage are the third most popular in the world, after the Caribbean and the Mediterranean. Vancouver and (to an increasing extent) Seattle serve as "home ports" (where passengers embark and/or disembark) for these voyages. At Vancouver's Canada Place, a third berth has been opened at its cruise ship terminal. Prince Rupert, already active in the pocket cruise ship market, has announced the construction of a \$9 million cruise ship berth to attract calls by the luxury lines in the Alaska trade.

In Eastern Canada, luxury cruise vessels sail out of New York and up the eastern seaboard, calling in Halifax, Charlottetown and other East Coast ports before entering the St. Lawrence River for calls at Quebec City and Montreal. There are also shorter cruises out of New York or Boston that travel northward to Halifax, Saint John and other Atlantic ports. Quebec City opened a new cruise terminal in 2002 and saw a dramatic increase in passenger traffic (up 36 per cent over 2001).

Table 8-14 shows international cruise ship traffic at major Canadian ports in 2001 and 2002. For a longer time series (1992 to 2002), see Addendum Table A8-12. Other Canadian ports, such as Charlottetown and Victoria, also benefit from calls by major cruise lines.

**TABLE 8-14: INTERNATIONAL CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 2001 AND 2002**  
(Passengers)

Year	Vancouver	Montreal	Quebec City	Halifax	Saint John
2001	1,060,383	23,900	48,776	160,241	88,190
2002 (prel.)	1,125,252	38,000	66,365	157,036	71,168

Source: Canada Port Authorities

## FREIGHT TRANSPORTATION

Marine freight traffic totalled 340 million tonnes<sup>4</sup> in 2001, a 2.4 per cent decrease from 2000. Domestic flows<sup>5</sup> accounted for about one sixth of this (53.2 million tonnes), 2.3 per cent less than in 2000 (54.5 million tonnes). Of these domestic flows, Canadian-flag vessels carried an overwhelming 95.4 per cent (50.8 million tonnes).

In 2001, Canada-U.S. traffic totalled 108.0 million tonnes, a 0.6 per cent decrease over 2000. Of this, Canadian-flag vessels accounted for just over half, at 50.3 per cent, for a total of 54.3 million tonnes. "Other" international (deep-sea or overseas) traffic<sup>6</sup> decreased by 4.0 per cent in 2001 to 179 million tonnes. Canadian-flag vessels carried only 0.1 per cent of this traffic.

Table 8-15 shows Canada's marine traffic statistics, by sector, for the years 2000 and 2001. Addendum Table A8-13 covers the same information from 1986 to 2001.

Table 8-16 shows the share of Canadian waterborne trade carried by Canadian-flag vessels in 2001.

**TABLE 8-15: CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 2000 AND 2001**

(Millions of Tonnes)

	Flows			Total Flows	Total Handled
	Domestic	Transborder	Overseas		
2000	54.5	108.6	185.2	348.3	402.8
2001	53.2	108.0	178.6	339.8	393.0

Source: Statistics Canada, *Shipping in Canada*, Cat. 54-205

**TABLE 8-16: CANADIAN-FLAG SHARE OF CANADIAN WATERBORNE TRADE, 2001**

(Millions of tonnes)

Canadian Waterborne Trade	Canadian Flag	Per cent	U.S. Flag	Per cent	Foreign Flag	Per cent	Total Traffic
Domestic	50.8	95.4	0.1	0.1	2.4	4.5	53.2
Canada/U.S.	54.3	50.2	10.6	9.8	43.2	40.0	108.0
Deep-Sea	0.2	0.1	0.1	0.0	178.4	99.9	178.6
<b>Total</b>	<b>105.2</b>	<b>31.0</b>	<b>10.7</b>	<b>3.2</b>	<b>223.9</b>	<b>65.9</b>	<b>339.8</b>

Source: Statistics Canada and Transport Canada

## DOMESTIC MARINE FREIGHT TRAFFIC

### COASTING TRADE ACTIVITY FOR 2002

The transportation of passengers and cargos, as well as marine-related activities in Canadian waters, is normally restricted to Canadian-registered duty-paid ships. This also applies to the exploration and exploitation of non-living natural resources in Canada's continental shelf. However, when no Canadian ship is available or capable of providing a particular service, foreign-registered ships can apply to Canada Customs and Revenue Agency (CCRA) for licences to enter Canada's coasting trade.

4 Based on traffic flows rather than tonnage handled at Canadian ports (domestic volumes are not double counted).

5 Maritime traffic that originates from and is destined for a Canadian port. Flows count traffic volume only once, in contrast to port loadings and unloadings, for which, in the case of domestic traffic, approximately the same volumes get counted twice.

6 "Other" international traffic includes shipments to and from foreign countries other than the United States.



In 2002, CCRA received 82 applications for a coasting trade licence, down from the 100 in 2001. The Canadian Transportation Agency denied four of these applications and rescinded one as the result of an objection raised by a stakeholder. The United States was the predominant foreign flag, with 19 requests.

Not all approved requests result in the applicant following through in obtaining a licence. The highest area of requests continued to be for vessels for use in offshore oil and gas exploration and production. In 2002, there were 16 tanker requests, eight for seismic vessels and eight for drill ships and rigs. As offshore activity shifts from exploration to production, the requirement for large-capacity shuttle tankers is increasing. The request for a licence may involve the use of several tankers for a number of voyages over a twelve-month period.

Table 8-17 shows the actual tonnage and percentage of total domestic cargo tonnage carried by foreign-registered vessels in 2000 and 2001. Table A8-14 in the Addendum gives this same information over a longer time period.

**TABLE 8-17: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN THE CANADIAN COASTING TRADE, 2000 AND 2001**

Year	Canadian	Per cent	Foreign	Per cent	Total
2000	53,885,963	98.85	627,067	1.15	54,513,030
2001	50,778,193	95.38	2,458,615 <sup>1</sup>	4.62	53,236,808

<sup>1</sup> Significant increase of "Crude Petroleum Oils" shipments from Grand Bank (Hibernia) and Port Hawkesbury.

Source: Transport Canada, from data supplied by Statistics Canada

Being both loaded and unloaded at Canadian ports, domestic cargo is handled twice within the Canadian port system. Domestic cargo fell by 2.4 per cent to 106.4 million tonnes in 2001. Decreased shipments of pulpwood, logs and bolts, iron ore, stone, sand and gravel offset a significant increase in shipments of crude petroleum, fuel oil, wheat, and coal.

Table 8-18 shows flows of domestic marine traffic by region in 2001.

**TABLE 8-18: MARINE DOMESTIC FLOWS BY CANADIAN REGION, 2001**

Region of Origin (Loadings)	(Thousands of tonnes)				
	--- Region of Destination (Unloadings) ---				
	Atlantic	St. Lawrence	Great Lakes	Pacific	All Regions
Atlantic	8,936	3,093	437	7	12,473
St. Lawrence	764	5,237	6,339	1	12,340
Great Lakes	315	5,010	8,957	0	14,283
Pacific	3	0	0	14,138	14,141
<b>All Regions</b>	<b>10,018</b>	<b>13,340</b>	<b>15,733</b>	<b>14,146</b>	<b>53,237</b>

Source: Statistics Canada, *Shipping in Canada*, Cat. 54-205

Most domestic traffic passes through the Great Lakes–St. Lawrence Seaway system. In 2001, the ports serving the Seaway handled 55.7 million tonnes (loadings and unloadings), or 52 per cent of the total domestic tonnage. Pacific region ports handled 28.3 million tonnes, or 26.6 per cent of the total. Pacific ports handled 5.0 million tonnes less domestic cargo in 2001 than in 2000, 99.8 per cent of which originated and terminated within that region. Atlantic region ports handled 22.5 million tonnes of domestic cargo in 2001, or 3.4 per cent less than in 2000.

In 2001, the primary commodities handled in the domestic trade across Canada were:

- pulpwood and chips (13.5 million tonnes, down 11.5 per cent from 2000)
- stone, limestone, sand and gravel (14.1 million tonnes, down 4.6 per cent)
- iron ore and concentrates (12.5 million tonnes, down 4.4 per cent)
- logs and bolts (5.7 million tonnes, down 30.7 per cent)
- crude petroleum (11.1 million tonnes, up 13.9 per cent);
- fuel oil (8.8 million tonnes, up 7.6 per cent)
- wheat (8.4 million tonnes, up 2.5 per cent)

Together, these commodities represent more than two thirds (71 per cent) of all domestic tonnage handled at Canadian ports in 2001.

## INTERNATIONAL MARINE FREIGHT TRAFFIC

Canadian ports handled 286.6 million tonnes of international cargo in 2001, down 2.4 per cent from 2000. Of that total, 60.8 per cent was export-oriented (including in-transit and re-export traffic). Japan, China, South Korea, the United Kingdom and other western European nations accounted for more than 60 per cent of Canada's total international marine traffic (exports and imports) in 2001.

## CONFERENCE/NON-CONFERENCE MARKET SHARES

Non-conference traffic has grown consistently in recent years, both in absolute terms and as a percentage of total liner traffic. It did, however, decrease to 17.4 million tonnes in 2001, while conference traffic remained relatively constant compared with 2000. Non-conference operators still moved more than 60 per cent of the total liner traffic. If non-conference U.S. origin/destination transshipped traffic is taken into account, the non-conference share becomes even more dominant.<sup>7</sup>

Table 8-19 compares the conference and non-conference shares of Canadian liner trade between 2000 and 2001. Table A8-15 in the Addendum shows data from 1994.

**TABLE 8-19: CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 2000 – 2001**

	(Millions of tonnes)	
	2000	2001
Conference		
Exports	3.9	3.7
Imports	6.8	6.6
Total	10.6	10.3
Non-conference		
Exports	12.6	11.6
Imports	7.9	5.8
Total	20.5	17.4

Source: Transport Canada, International Database; Statistics Canada

As in past years, in terms of the type of cargo carried, conference operators tended to concentrate almost exclusively on containerized traffic: 10.1 million of the 10.3 million tonnes of the cargo they carried was in containers. Non-conference traffic is also increasingly characterized by a large percentage of cargo in containers (77 per cent in 2001) but includes general cargo and neobulk traffic as well.

The breakdown of liner traffic by foreign region of origin/destination is also useful to illustrate the relative shares of conference and non-conference operators on different routes. Table 8-20 compares conference and non-conference liner traffic by region for 2001. The decrease in liner traffic in 2001 affected most trading regions but most significantly the Other America and Europe routes.

**TABLE 8-20: LINER TRAFFIC BY REGION, 2001**

	(Millions of tonnes)				
Region	Liner Imports		Liner Exports		Total
	Conference	Non-conference	Conference	Non-conference	
Europe	4.3	2.2	3.6	1.2	11.3
Asia	2.3	1.6	—	8.0	11.8
Central America	—	0.4	—	0.7	1.1
South America	—	0.8	—	0.5	1.3
Other America	—	0.2	—	0.4	0.6
Middle East	—	0.2	—	0.4	0.6
Oceania	—	0.2	—	0.2	0.4
Africa	—	0.2	—	0.1	0.4
<b>Total</b>	<b>6.6</b>	<b>5.8</b>	<b>3.6</b>	<b>11.5</b>	<b>27.5</b>

Note: — means Nil.

Other America = North America plus Greenland and Saint Pierre and Miquelon

Source: Transport Canada, International Database; Statistics Canada

## CANADA—U.S. FREIGHT TRAFFIC

Canada's marine traffic to and from the United States reached 107.8 million tonnes in 2001, down slightly from 2000. Imports (unloadings to U.S. destinations)<sup>8</sup> grew by 5.0 per cent in 2001, while exports (loadings) decreased by 4.4 per cent.

Table 8-21 shows Canada's maritime trade with the United States in 2000 and 2001. Addendum Table A8-16 shows trade with the United States since 1986.

**TABLE 8-21: CANADA'S MARITIME TRADE WITH THE UNITED STATES, 2000 – 2001**

	(Millions of tonnes)		
	Loaded	Unloaded	Total
2000	64.7	43.8	108.5
2001	61.9	46.0	107.9

Source: Statistics Canada, Cat. 54-205; Transport Canada

In 2001, loadings at Canadian ports destined to the United States totalled 61.9 million tonnes. Seven commodities accounted for 80 per cent of this volume: crude petroleum (11.0 million tonnes), stone, limestone, sand and gravel (9.3 million tonnes), gasoline (7.7 million tonnes), fuel oil (6.5 million tonnes), gypsum (6 million tonnes), iron ore (5 million tonnes) and salt (4.3 million tonnes).

<sup>7</sup> It is important to note that the data in the tables are not adjusted for U.S. transshipments moving through Canadian ports. Much of this traffic moves on conference vessels but at non-conference rates. The route most likely affected by these transshipments is the one between Europe and Canada. Montreal estimates that approximately 50 per cent of its liner traffic originates in or is destined for the United States. In addition, Halifax is handling growing amounts of U.S. Midwest traffic. This would, of course, affect the balance between conference/non-conference traffic further in favour of the independent operators.

<sup>8</sup> Including in-transit and transshipment cargo.

From 2000 to 2001, there were some significant changes in the volumes of major commodities exported to the United States. Gasoline exports jumped by 62.9 per cent, while fuel oil and salt exports increased by 20.1 and 24.8 per cent, respectively. In contrast, iron ore exports decreased by 47.8 per cent, while crude petroleum and gypsum exports decreased by 11.6 per cent and 10.6 per cent, respectively.

There were two main flow corridors in 2001: the Canadian Atlantic to the U.S. Atlantic route, and the Canadian Great Lakes to the U.S. Great Lakes route. The Atlantic route carried 33.6 million tonnes, or 54 per cent of total loadings to the United States, while the Great Lakes route carried 14.0 million tonnes, or 23 per cent of total loadings. These two routes accounted for 77 per cent of Canada's commodities traffic volumes shipped to the United States using marine transport services.

In 2001, imports of U.S. marine shipments to Canada increased by 5.0 per cent from 43.8 million tonnes in 2000 to 46.0 million tonnes. Seven commodities accounted for more than 80 per cent of this volume: coal (22 million tonnes), iron ore (4.5 million tonnes), fuel oil (2.6 million tonnes), stone, limestone, sand and gravel (3.0 million tonnes), inorganic chemicals (2.7 million tonnes), other petroleum products (2.2 million tonnes) and soybeans (1.3 million tonnes).

As was the case with exports, there were some significant differences at the commodity level in the volumes of marine imports from the United States between 2000 and 2001. Imports of coal and fuel oil were up 10.1 and 80.2 per cent, respectively, while shipments of iron ore and stone, limestone, sand and gravel dropped by 29.7 and 11.2 per cent, respectively.

More than 75 per cent of the total volume of all marine imports from the United States originated at ports on the Great Lakes. Ports along the U.S. Atlantic and the Gulf of Mexico accounted for 17.8 per cent, and U.S. Pacific ports made up the remaining 6.7 per cent.

Table 8-22 shows traffic flows from Canadian to U.S. ports in 2001, while Table 8-23 shows traffic flows from U.S. to Canadian ports.

**TABLE 8-22: CANADA'S MARINE TRAFFIC TO THE UNITED STATES, 2001**

	(Millions of tonnes)			
Canadian Region of Origin	U.S. Region of Destination			Total
	U.S. Atlantic	U.S. Great Lakes	U.S. Pacific	
Atlantic	33.6	0.2	0.2	33.9
St. Lawrence	3.6	3.1	0.0	6.8
Great Lakes	0.1	14.0	0.0	14.1
Pacific	0.2	0.0	6.9	7.1
<b>Total</b>	<b>37.5</b>	<b>17.4</b>	<b>7.0</b>	<b>61.9</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada

**TABLE 8-23: CANADA'S MARINE TRAFFIC FROM THE UNITED STATES, 2001**

	(Millions of tonnes)			
Canadian Region of Destination	U.S. Region of Origin			Total
	U.S. Atlantic	U.S. Great Lakes	U.S. Pacific	
Atlantic	3.8	0.4	0.1	4.4
St. Lawrence	3.9	3.0	0.4	7.3
Great Lakes	0.2	31.3	0.0	31.5
Pacific	0.2	0.0	2.6	2.8
<b>Total</b>	<b>8.2</b>	<b>34.8</b>	<b>3.2</b>	<b>46.1</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada

## OVERSEAS FREIGHT TRAFFIC

Canada's marine trade with overseas countries (excluding the United States) totalled 179 million tonnes in 2001, a four per cent decrease from 2000. More of this volume moved as exports than imports. Approximately 63 per cent of overseas exports were loaded at West Coast ports, while 90 per cent of overseas imports were unloaded at East Coast ports.

Table 8-24 shows Canada's maritime overseas trade in 2000 and 2001. Addendum Table A8-17, shows overseas trade since 1986.

**TABLE 8-24: CANADA'S MARITIME OVERSEAS TRADE, 2000 – 2001**

	<i>(Millions of tonnes)</i>		
	<i>Loaded</i>	<i>Unloaded</i>	<i>Total</i>
2000	123.1	62.1	185.2
2001	112.5	66.3	178.8

Source: Statistics Canada, Cat. 54-205; Transport Canada

In 2001, 112.5 million tonnes of cargo were loaded at Canadian ports to be shipped to non-U.S. countries, 8.6 per cent less than in 2000. The major commodities shipped from Canada included coal (27.6 million tonnes), iron ore (17.6 million tonnes), wheat (15.2 million tonnes), containerized freight (13.0 million tonnes), woodpulp (6.7 million tonnes), sulphur (5.3 million tonnes) and potash (3.9 million tonnes). Slightly more than 10 per cent of this traffic was containerized.



Coal, iron ore, wheat, wood pulp, potash and sulphur shipments showed significant decline in 2001 from 2000. Iron ore shipments decreased 12.9 per cent, coal by 8.7 per cent and wheat by nine per cent. Fuel oil shipments, however, increased by 69 per cent.

In 2001, three fifths of Canada's total marine exports to overseas destinations were loaded at ports in western Canada. The ports along the St. Lawrence Seaway handled most of the loading for ports in eastern Canada. Western ports dominated the tonnage shipped on the Asia and Oceania trade routes with 88 per cent, while the eastern ports handled 73 per cent of the tonnage shipped to Europe.

In terms of imports, Canadian ports unloaded 66.3 million tonnes of marine shipments from overseas origins in 2001, 6.7 per cent more than in 2000. Imports of crude petroleum<sup>9</sup> totalled 32 million tonnes, or 48 per cent of all marine traffic unloaded from offshore origins. Other major commodities unloaded included containerized freight (10.1 million tonnes), coal (3.0 million tonnes), inorganic chemicals (3.1 million tonnes), alumina and bauxite (5.5 million tonnes), iron and steel (2.1 million tonnes) and fuel oil (1.9 million tonnes). About 15 per cent of this inbound traffic was containerized.

In addition, more than 89 per cent of overseas shipments were unloaded at ports in eastern Canada. Overseas cargo originated mainly from Europe, the Middle East and Africa.

Table 8-25 shows Canada's marine traffic to overseas destinations, while Table 8-26 shows Canada's marine traffic from overseas markets in 2001.

**TABLE 8-25: CANADA'S MARINE TRAFFIC TO OVERSEAS, 2001**

(Millions of tonnes)

Foreign Region of Destination	Canadian Region of Origin		
	Eastern Ports	Western Ports	Total
Asia and Oceania	6.5	48.0	54.5
Europe	24.7	9.0	33.7
South and Central America	5.7	9.3	15.0
Middle East and Africa	4.7	4.6	9.3
<b>Total</b>	<b>41.6</b>	<b>70.9</b>	<b>112.5</b>

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

**TABLE 8-26: CANADA'S MARINE TRAFFIC FROM OVERSEAS, 2001**

(Millions of tonnes)

Foreign Region of Destination	Canadian Region of Destination		Total
	Eastern Ports	Western Ports	
Europe	28.6	0.3	28.9
Middle East and Africa	14.8	0.1	14.9
South and Central America	13.1	0.8	13.9
Asia and Oceania	3.0	5.5	8.5
<b>Total</b>	<b>59.5</b>	<b>6.7</b>	<b>66.2</b>

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

## MARINE TRADE

According to international trade data, the value of Canadian international marine trade in 2001 was in the order of \$98.3 billion (excluding shipments via U.S. ports). This was 4.1 per cent lower than in 2000. Marine exports were valued at \$44.6 billion and imports at \$53.8 billion. The value of exports decreased by 4.7 per cent, notably with decreased cargoes outbound to Western Europe (United Kingdom, Germany, Belgium and Italy) and Asia (Japan, China, South Korea and Taiwan). The value of imports also decreased by 3.6 per cent.

Table 8-27 shows the value of the marine share of Canada's international trade in 2001.

**TABLE 8-27: VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 2001**

(Billions of Canadian dollars)

	Marine	All Modes	Marine (per cent)
<b>Transborder</b>			
Exports <sup>1</sup>	9.59	350.74	2.7
Imports	3.53	218.30	1.6
<b>Total U.S.</b>	<b>13.12</b>	<b>569.03</b>	<b>2.3</b>
<b>Other countries</b>			
Exports <sup>1</sup>	34.96	51.77	67.5
Imports	50.24	124.67	40.3
<b>Total</b>	<b>85.20</b>	<b>176.44</b>	<b>48.3</b>

<sup>1</sup> Including domestic exports and re-exports

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations

Marine traffic with the United States was valued at \$13.1 billion in 2001, driven by exports of \$9.6 billion. This value, however, represented only 2.3 per cent of total Canada-U.S. trade. The bulk of the traffic was handled by surface transport modes, such as trucking and rail.

<sup>9</sup> Including transshipments of North Sea Crude petroleum.

In 2001, the Canadian marine trade with overseas countries (excluding the United States) was valued at \$85.2 billion, with exports estimated at \$35 billion and imports at \$50.2 billion. In terms of value, marine transport accounted for 48 per cent of all overseas trade and was the dominant mode for shipping overseas freight.

The major areas of exports/imports are Asia, Western Europe and the United States. The principal commodities exported to foreign countries (including the United States) were forest products (\$8.6 billion), gasoline/aviation fuel (\$4.5 billion) and wheat (\$3.4 billion). Imports consisted of crude petroleum (10.6 billion), automobile vehicles (\$7.6 billion), manufactured/miscellaneous goods (\$6.9 billion) and machinery (\$4.2 billion). For the major countries and principal commodities exported/imported by value, see Addendum Table A8-18.

*The air transport industry continued to be confronted with difficult market conditions in 2002, making demand stimulation quite a challenge.*

## MAJOR EVENTS IN 2002

### AIR TRAVEL COMPLAINTS COMMISSIONER

The Minister of Transport appointed a new Air Travel Complaints Commissioner, Ms Liette Lacroix Kenniff, in September 2002. In January 2003, the Commissioner released her report, for the period of January 2002 to June 2002. The report showed that the public made fewer complaints than in previous periods, 2,205 between July 2001 and June 2002 compared with 2,745 complaints during the previous year. Most complaints between January and June 2002 were about quality-of-service issues (33 per cent), followed by flight schedules (20 per cent), ticketing (13 per cent) and baggage handling (12 per cent). About two thirds (68 per cent) of complainants indicated that they were fully or partially satisfied with the outcome of complaints handled by the Commissioner's office. As part of her report, the Commissioner recommended that air carriers show the true cost of the ticket in their advertisements; avoid misleading advertising; publicly and prominently display their limits of liability; and compensate passengers for any downgrades in service.

### CANADA AIRPORTS ACT

In 2001, the Government of Canada announced its intention to develop a *Canada Airports Act*. The proposed legislation will clarify the roles and responsibilities of airport authorities. Preliminary drafts have focused on a number of other issues, including accountability to the public and users, improved governance, principles for setting fees, oversight of ancillary activities, and requirements to respect Canada's international obligations.

The legislation builds upon the 1994 National Airports Policy and will complete the legislative base for all components of the air industry, including NAV CANADA, airlines and airports. The legislation will address the issues raised in the *Local Airports Authority Lease Review Consultation Report*, the concerns expressed by the Auditor General in October 2000, and the July 2001 report of the *Canada Transportation Act Review Panel*. It is expected that the Bill will be tabled in the House of Commons in March 2003.

### RENT REVIEW

In 2001, the Government of Canada announced that it would review the rent policy for leased airports in the National Airports System, as the majority of transfers to local operators were completed. The review is in response to the demands of airports and aviation communities and to the concerns expressed by the Auditor General in October 2000. It will ensure that the federal government's airport rent policy balances the interests of all stakeholders, including the air industry and Canadian taxpayers. The review is being conducted at the same time as, but independently of, the development of the proposed *Canada Airports Act*, and involves consultations with stakeholders.

### COMPUTER RESERVATION SYSTEMS

Most airlines use a computer reservation system to distribute their air services to travel agents for sale. These systems are governed by regulations passed in 1995 under the *Aeronautics Act* to ensure adequate competition. To address the restructuring of the Canadian air market as well as increased reliance on Internet bookings, Transport Canada began a review of its regulations respecting computer reservation systems. Results of this review are expected in June 2003.



## AIR TRAVELLERS SECURITY CHARGE

The Air Travellers Security Charge, announced in Budget 2001 of the federal government, became effective on April 1, 2002. The charge is paid by air travelers to fund the costs of the enhanced air travel security system introduced in response to the terrorist attacks in the United States of September 11, 2001. The air carrier collects the charge from the purchaser of an air transportation service at the time of payment for the air travel. The cost of the charge was set at \$12 per enplanement, up to a maximum of \$24 per ticket, for air travel within Canada, \$12 for transborder air travel to the continental United States, and \$24 for other international air travel. For domestic travel, the charge applies to flights between the 89 airports at which the Canadian Air Transport Security Authority delivers the enhanced air travel security system.

## AMENDMENTS TO THE COMPETITION ACT

Bill C-23, passed in June 2002, allows the Competition Tribunal to extend the duration of cease and desist orders issued by the Commissioner of Competition where necessary for the Commissioner to complete an examination of a matter. The Bill also gave the Tribunal its own power to issue a cease and desist order while an investigation by the Commissioner is under way. Cease and desist orders are used to stop potentially anti-competitive activity prior to a final decision being made on the legitimacy of the activity in question. Bill C-23 also gives the Competition Bureau the power to impose administrative monetary penalties of up to \$15 million on a person operating a domestic air service that is found to have abused its dominant position.

## ELECTRONIC COLLECTION OF AIR TRANSPORTATION STATISTICS

Electronic Collection of Air Transportation Statistics (ECATS) is a pilot project for collecting and providing air transportation data to the industry, with the assistance of Statistics Canada and the Canadian Transportation Agency. Six airports and five airlines took part in the project, and the evaluation made by participants recommended to expand ECATS to all carriers and airports.

## AIRLINE COMPENSATION PROGRAM

On October 2, 2001, the Minister announced a \$160-million program to compensate Canadian air carriers and specialty air operators for losses resulting from the

closure of Canada's airspace following the terrorist attacks of September 11, 2001. The first payments were made in October 2001, and all payments, which totalled \$99,318,412.98, were completed by May 2002.

## THIRD-PARTY WAR AND TERRORISM LIABILITIES INDEMNIFICATION

On September 22, 2001, after international insurers withdrew previous levels of coverage, the federal government announced that it would provide short-term indemnification for third-party war and terrorism liabilities for providers of essential aviation services in Canada. This indemnity continues to be in force, for renewable periods of 60 days. Efforts are still under way to develop an international, longer-term solution.

## PROVINCIAL AND TERRITORIAL INITIATIVES

On November 14, 2002, the Government of Quebec and Air Canada announced a three-year agreement under which the airline provides reduced fares to non-government users of air transportation services on 15 regional routes and continuation of service on these routes in return for the Quebec government increasing purchases of air services from Air Canada. Following a complaint from Jetsgo, the Competition Bureau examined the agreement but found that it did not breach the *Competition Act*.

The Yukon adopted its Government Air Travel Policy in April 2002 stipulating that the government has to purchase air travel equally between competing airlines that provide year-round service. It also allows the government to temporarily stop doing business with any airline it believes is trying to drive other carriers out of the market. The Nunavut Territorial Government is in the process of assessing air services in the territory with a view to working with carriers to improve routings and frequencies.

## PRECLEARANCE ACT

The *Preclearance Act* and its accompanying regulations entered into force on May 1, 2002. Under the Act, U.S. border inspectors may administer, within the confines of preclearance areas at designated Canadian airports, certain U.S. laws related to customs, immigration, public health, food inspection, and plant and animal health.

However, U.S. preclearance officers cannot exercise the authorities granted under the Act until preclearance areas have been designated and the 2001 Canada-U.S. Preclearance Agreement is brought into force. The

designation of preclearance areas, which is the responsibility of the Minister of Transport (in consultation with the Minister of Foreign Affairs), and the entry into force of the Preclearance Agreement are expected to occur in 2003.

The entry into force of the Preclearance Agreement will formalize intransit preclearance at Vancouver (currently provided on a pilot basis) and allow for its introduction at Calgary, Montreal and Toronto. Other Canadian airports with U.S. preclearance (Edmonton, Ottawa, Winnipeg) will subsequently be eligible for intransit preclearance.

## MULTIPLE DESIGNATION POLICY

On May 21, 2002, the Minister announced a new multiple designation policy that allows all carriers to apply to operate scheduled international air services to any air market regardless of market size. Previously, the policy allowed for designation of only one Canadian carrier in markets where there are fewer than 300,000 one-way scheduled passenger trips per year. The threshold was eliminated to encourage competition, innovation and growth in the airline industry, and to provide increased international travel options for consumers. The modification to the policy allowed for Air Transat to be designated to serve a number of new European destinations: Portugal, Belgium, the Netherlands, Ireland, Italy and Poland. The new policy has no effect on the Canada-U.S. Open Skies Agreement, which already allowed for multiple designations.

## BILATERAL AGREEMENTS

Canada established its schedule for bilateral air transport negotiations in 2002. This was in response to the priorities of Canada's air carrier industry and to requests from foreign governments. Canada's charter air carriers showed a continued interest in operating scheduled international air services in 2002.

Significant amendments and expanded air service opportunities were obtained through bilateral air transport agreements concluded with Italy in May, the Czech Republic in June, Switzerland in October and Hong Kong in December. More cities in Canada are now open for scheduled air services, as are more cities in Italy and Switzerland. Canadian, Swiss, Italian, Czech and Hong Kong airlines now have greater flexibility in deciding whether to operate their own aircraft and/or code-share air services. The amended agreements with Italy, the Czech Republic and Switzerland contain strong aviation safety and security provisions and allow airlines greater flexibility in capacity and offered prices. New

arrangements with Hong Kong include the addition of liberal code-share rights, which allow one airline to put its designator code on another airline's flight. These new rights will allow Air Canada and any other Canadian airline that may be designated in the future to share codes with other airlines to, from and beyond Hong Kong, a principal Asian gateway. Cathay Pacific Airways and any other designated airlines of Hong Kong will enjoy similar opportunities to, from and beyond Canada. Air service arrangements with Israel and New Zealand were extended during the year providing new opportunities for airlines.

## INFRASTRUCTURE

Canada's air transportation infrastructure is composed of airports and the Air Navigation System (ANS). Transport Canada's role with respect to airports has shifted from owner and operator to landlord and regulator, and while it continues to be responsible for the regulation and safety of the ANS, it has transferred ownership to NAV CANADA. These changes were designed to promote safety, efficiency, affordability, service integration, innovation and commercialization.

## AIRPORTS

Canada's approximately 1,700 aerodromes are divided into three categories: water bases for floatplanes, heliports for helicopters, and land airports for fixed-wing aircraft. Aerodromes refer to facilities registered with Transport Canada as aircraft landing and take-off sites.

Most of Canada's commercial air activity takes place at certified land airports, sites that because of their level of activity or location are required to meet Transport Canada's airport certification standards.

At the close of 2002, the *Canada Flight Supplement* and the *Canada Water Aerodrome Supplement* listed 1,722 certified or regulated sites. Table 9-1 shows the number of airports for fixed-wing aircraft in Canada.

TABLE 9-1: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 2002

	Certified	Registered	Military	Total
Heliports	179	81	9	269
Water	11	332	0	343
Land	352	745	13	1,110
<b>Total</b>	<b>542</b>	<b>1,158</b>	<b>22</b>	<b>1,722</b>

Source: *Canada Flight Supplement*, January 23, 2003; *Water Aerodrome Supplement* March 23, 2002



A total of 263 land airports offered scheduled passenger service, while the other 847 were available for other public and private uses.

Since the introduction of the National Airports Policy in 1994, the federal government has been reducing its role in the management, operation and ownership of airports. The transfer process has been largely completed, and the current state of transfer is posted monthly on Transport Canada's Web site at [www.tc.gc.ca/programs/airports/status/menu.htm](http://www.tc.gc.ca/programs/airports/status/menu.htm).

## AIRPORT AUTHORITY REVENUES AND EXPENSES

Airport authorities operate the majority of federally owned NAS airports under long-term leases; the exceptions are the three territorial NAS airports, which are owned and operated by territorial governments, and Kelowna Airport, which is operated by the City of Kelowna. The airport authorities are incorporated as not-for-profit, non-share capital corporations with independent Boards of Directors. Their financial statements for the year ending in 2001 are shown in Addendum Table A9-1. Prince George Airport is the only NAS airport that has not been transferred to an airport authority. It is scheduled for transfer on March 31, 2003.

## AIRPORTS CAPITAL ASSISTANCE PROGRAM

Since April 1995, Transport Canada has funded the Airports Capital Assistance Program (ACAP) to help eligible non-NAS airports finance capital projects related to safety, asset protection and operating cost reduction. To be eligible, the airports must receive a minimum of 1,000 passengers annually, meet airport certification requirements, and not be owned by the federal government. In 2002, the program approved 52 projects at 40 airports for an estimated total funding of \$40.8 million. Addendum Table A9-2 shows, by province, the allocation of ACAP funds since the inception of the program, while Addendum Table A9-3 lists ACAP projects approved in 2002.

## AIRPORT IMPROVEMENT FEES

A number of airport authorities have introduced Airport Improvement Fees (AIFs) in recent years. On average, AIFs now represent approximately 20 per cent of total airport revenues, and this percentage continues to grow. Most AIFs currently vary from \$10 to \$15 per passenger. The majority of AIFs are collected through the airlines' ticket systems, but some are collected directly by the airport. For a list of the current AIFs for the 26 NAS airports, see Table A9-4 in the Addendum.

## AIR NAVIGATION SYSTEM

NAV CANADA is the not-for-profit, private corporation that owns and operates Canada's civil Air Navigation System. It purchased the system from the federal government on November 1, 1996, for \$1.5 billion. The system is made up of seven Area Control Centres, one terminal control unit, 43 control towers, 77 flight service stations and 67 maintenance centres, as well as more than 1,400 ground-based navigational aids. NAV CANADA provides air traffic control services, flight information, weather briefings, airport advisories and electronic aids to navigation. Since 1996, NAV CANADA has committed close to \$1 billion in new systems and technology.

## FINANCIAL PERFORMANCE

NAV CANADA has the right to set and collect ANS customer service charges from aircraft owners and operators. Most ANS customer service charges are applicable to commercial air carriers. As a result, the financial instability of individual air carriers may have short-term effects on NAV CANADA's cash flows.

In accordance with the *Civil Air Navigation Services Commercialization Act*, NAV CANADA operates on a break-even basis. For fiscal year 2001/02, revenues matched expenses at \$971 million (compared with \$916 million in 2000/01), but this was only made possible through the full utilization of the company's rate stabilization account, which is now in a \$19 million deficit position.

The terrorist attacks of September 11, 2001, and the slowdown in the global economy have had and continue to have a significant negative effect on the aviation industry worldwide. Since then, many air carriers have significantly reduced capacity as a result of lower passenger volumes. Despite a gradual increase in air traffic during the latter half of fiscal 2001/02, the overall reduction has had and continues to have a significant negative effect on NAV CANADA's revenues. The revenue shortfall from the level anticipated prior to September 11, 2001, over the four fiscal years ending August 31, 2002 to 2005, is anticipated to be approximately \$360 million, assuming that there will be no significant macroeconomic forces affecting air traffic. Actual shortfalls in revenue will require adjustments to future customer service charges, increased revenue from other sources and/or expense reductions to meet the charging principles under the *Air Navigation System Act*.

While NAV CANADA has been affected by the current industry downturn, it developed a balanced plan to make up for an anticipated \$145 million shortfall in the fiscal year ending August 31, 2002. The plan involves a



combination of the following: expense reductions; new revenue through a 6 per cent service charge increase that came into effect on January 1, 2002; and revenue from its rate stabilization fund. An additional 3 per cent increase in the service charge will come into effect on January 1, 2003. Table 9-2 summarizes NAV CANADA's financial status in 2000/01 and 2001/02.

**TABLE 9-2: FINANCIAL SUMMARY FOR NAV CANADA, 2001 AND 2002**

	(Thousands of dollars)	
	2000/01	2001/02
Total Revenues	915,653	971,247
Operating Expenses	717,176	763,511
Other Expenditures	198,477	207,736
Capital Expenditures	(114,034)	(123,405)

Source: NAV CANADA annual reports

## INDUSTRY STRUCTURE

### KEY PLAYERS

#### AIR CANADA AND SUBSIDIARIES

Air Canada, together with its subsidiaries, remained Canada's largest airline in 2002, with \$9.8 billion in revenues. It provided domestic service to 66 points in Canada, 55 in the United States and 30 international destinations in 23 countries. It is a founding member of Star Alliance, a consortium of 14 airlines that serve 729 destinations in 124 countries. Air Canada also has three wholly owned subsidiaries: Jazz operates less busy domestic and transborder routes, particularly to small communities; Zip began service on September 22, 2002, providing frequent low-fare service on domestic routes; and Air Canada Vacations offers tour packages to popular destinations. In addition to its subsidiaries, Air Canada offers no-frills service under the brand name Tango to the most popular destinations in Canada and the United States. Jetz, an internal division of Air Canada, offers premium charter service to sports teams and businesses. In addition, there are four independent local service operators (Air Creebec, Air Georgian, Air Labrador and Central Mountain Air) that offer regional services on behalf of Air Canada.

#### LOW-COST CARRIERS

Domestically, and on some transborder routes, Canada has seen the entry and growth of a number of low-cost, no-frills carriers in recent years. In fact, these carriers have been the source of most traffic growth, a trend that can be seen in Canada and around the world. Calgary-based WestJet is now Canada's second-largest domestic

airline in terms of passengers carried. It serves 21 cities with 36 aircraft and in 2002 had revenues of \$594 million. CanJet, based in Halifax, restarted service in June 2002 following a 14-month absence after its earlier acquisition by Canada 3000, which subsequently went bankrupt in 2001. By year-end, CanJet was operating five aircraft to seven Canadian cities. Montreal-based Jetsgo by year-end was serving six Canadian destinations with three aircraft.

### CHARTER AIR SERVICES

Canada has a number of charter airlines that provide service both domestically and internationally. Their focus is point-to-point transportation serving leisure destinations, often as part of a vacation package. Their markets are typically served with low frequencies (sometimes only one or two flights a week) and are highly seasonal, with summer service mainly to Europe or within Canada and winter service to the south. The major players in this segment of the industry are Air Transat and SkyService Airlines. Montreal-based Air Transat is Canada's second-largest airline in terms of revenues (\$801 million in 2001) and has a fleet of 17 aircraft. SkyService is based in Mississauga and serves nine domestic points on behalf of Conquest Vacations. It has announced a plan to expand its fleet from 5 to 11 aircraft by the spring of 2003.

The market has also seen two recent entrants: Vancouver-based HMY Airways began international charter service to Mexico, Manchester, Las Vegas and Los Angeles with two aircraft in November; and Ottawa-based Zoom Airlines began service to southern vacation destinations in December 2002 in conjunction with Go Travel Direct Vacations.

### FOREIGN AIRLINES

Twelve U.S. airlines serve 17 Canadian cities, while 30 foreign airlines provide service from Canada (primarily from Montreal, Toronto and Vancouver) to 39 international destinations in 28 countries. For a list of foreign airlines serving Canada on a scheduled basis, see Table A9-5 in the Addendum.

### NORTHERN AIRLINES

A number of airlines provide year-round service, both scheduled and charter, across northern Canada with combination passenger and cargo aircraft. The major participants are First Air, Canadian North (incorporated as Air NorTerra) and Air North, each of which is partially or wholly owned by Aboriginal groups. Air North is the most recent entrant, having started service in June 2002.

Canadian North extended its service to more remote communities in 2002 with new code-sharing relationships with Kenn Borek Air and North-Wright Airways.

### LOCAL SERVICE AIRLINES

Smaller local airlines also provide service across Canada, particularly to remote communities, in niche markets (e.g. Bearskin Airlines' service from Ottawa to Toronto/Buttonville, and floatplane and helicopter services in British Columbia), and as alternative services in some regional markets (e.g. Hawkair in British Columbia and Provincial Airlines in eastern Canada). For a list of the largest of these airlines and their major areas of operation, see Table A9-6 in the Addendum.

### ALL-CARGO AIRLINES

A number of all-cargo airlines provide jet service on behalf of Canada Post, courier companies, freight forwarders, consolidators and shippers. They include All-Canada Express, Cargojet Canada and ICC Canada, all based in Mississauga, Kelowna Flightcraft of British Columbia, and Morningstar Air Express of Edmonton. Cargojet Canada is the newest entrant in the market, having previously purchased Canada 3000 Cargo Inc. More recently, it also acquired shares of Winnport Logistics of Winnipeg.

### GENERAL AVIATION

General aviation represents about half of all aircraft movements at controlled airports in Canada, although much of the activity in 2002 was at non-controlled airports.

### COMMERCIAL AVIATION

The actual number of airlines operating in Canada is much larger than the previous section implies. At the end of 2002, the Canadian Transportation Agency reported that more than 2,000 licences were active. Table A9-7 in the Addendum shows the number of licences held as of December 31, 2002.

The number of personnel licences issued by Transport Canada confirms the importance of the commercial sector. The number of commercial licences held in 2002 is roughly equal to the number of air transport licences. Table A9-8 in the Addendum summarizes the number of personnel licences issued, while Table A9-9 gives a provincial breakdown of the licences.

Specialty air services are those services that use aircraft but do not involve the movement of passengers or cargo between two points. They include such diverse services as flight training, parachute jumping, glider towing, aerial forest fire management and fire fighting, aerial inspection and construction, aerial photography and surveying, advertising, weather sounding, crop spraying and heli-logging, as well as hovercraft services. While some large companies (e.g. Canadian Helicopters) are represented in this sector, many of the companies are very small operators serving local markets.

### BUSINESS AVIATION

Business aviation continued to grow in 2002 due to fractional ownership, which allows individuals or businesses that would not otherwise be permitted to own aircraft on their own to share in an aircraft's use by purchasing units of flight time. This type of aircraft ownership is regulated in Canada as a commercial air service.

### RECREATIONAL AVIATION

Recreational flying in its various forms represented the bulk of general aviation activity. It accounts for about two thirds of Canada's pilots and three quarters of all aircraft registered in Canada in 2002. It is also the largest segment of Canadian civil aviation activity. While most recreational aircraft are standard planes, this segment also includes all other types of recreational aircraft such as ultra-lights, gliders and balloons, among others. For further detail on the types of aircraft operated, see Table A9-10 in the Addendum.

### PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE

In 2001, the total revenue generated in the air transport industry dropped for the first time since 1993, by 8.4 per cent. Decreases were observed in most passenger markets as well as freight services. Although the prices of air services dropped by 3.6 per cent, this was not enough to stimulate the overall demand, which decreased by five per cent; this pattern has not been observed since the end of the 1970s. Canadian air carrier passenger traffic is expected to have fallen again in 2002, a result of the higher costs of air travel.

Continued industry restructuring yielded productivity gains of 5.2 per cent, a recovery from the 2000 decline. These gains, however, were offset by large factor price increases, most notably labour. In the end, unit costs rose by 1.5 per cent in 2001. Since 1991, productivity gains have been limited to 0.9 per cent per year, i.e. half the gains

recorded by the combined rail freight, air transport and trucking industries. Factor prices, which are mostly beyond the control of the industry, increased by 4.2 per cent, 2.6 times faster than general inflation. As a result, unit costs increased by 3.3 per cent per year from 1996 to 2001.

The airline industry had a difficult year in 2001. Air Canada reported a total loss of \$1.3 billion, Canada 3000 ceased operation, and Air Transat restructured its operations. Bucking the trend, WestJet reported a profit of \$37 million. In 2002, although the situation improved, the industry continued to experience difficulty. Despite \$9.8 billion in revenues, Air Canada reported a loss of \$428 million. WestJet reported profits of \$51.8 million and Air Transat's parent, Transat A.T. Inc., returned to profitability with \$7.8 million in net income.

For more information on price, productivity and financial performance of the air transport industry, see Tables A2-61 to A2-64 of the Addendum.

## FREIGHT TRANSPORTATION

Air cargo is carried in the belly-hold of passenger aircraft, in passenger/cargo combination or in all-cargo aircraft. Because Canada's domestic air cargo market is deregulated, there are no restrictions on routing, capacity or price. Transborder and international air cargo services are covered by bilateral air agreements, other international agreements and national policies. There is currently no Canadian carrier presence in the international (non-transborder) all-cargo air services industry, although cargo is carried in the belly-hold of passenger aircraft.

There are several operators in Canada dedicated to providing all-cargo service, with a total of 50 aircraft and combined revenue in 2002 of \$300 million. Air Canada provides air cargo service as part of its scheduled passenger air services. Cargo revenues accounted for 6 per cent of its revenues in 2002. Air NorTerra and First Air also provide air cargo services in the North, along with numerous other smaller operators.

Table A9-11 in the Addendum shows the volume of goods carried by Canadian air carriers on all-cargo services from 1993 to 2001. Between 2000 and 2001, the number of tonnes carried dropped in all markets, particularly the transborder and international markets. The domestic market dropped by two per cent. Table A9-12 in the Addendum shows the operating revenues generated by goods carried on Canadian air carriers' all-cargo services. Between 2000 and 2001, domestic revenues dropped by seven per cent, while international and transborder revenues (combined) remained stable.

Table A9-13 in the Addendum compares the value of goods shipped by air versus other modes. While air cargo trade between Canada and the United States rose steadily between 1997 and 2000, the decrease in 2001 continued in 2002, with a decline of \$6.5 billion, or 15 per cent. This loss was slightly higher in the import than the export sector. Air cargo's share of total Canada-U.S. trade was 6.5 per cent in 2002, down from a high of 8.1 per cent in 2000.

As Table A9-13 in the Addendum shows, Canada's air trade with countries other than the United States also declined in 2002, from \$39.9 billion to \$38.7 billion, but at a slower rate than in 2001. As with the United States, the loss was slightly higher on the import than the export side. Trade remained import-oriented, accounting for more than twice the value of exported goods. The air mode's share of the total value of trade with other countries dropped from 22.6 per cent to 21.5 per cent.

Of goods shipped by air, 85 per cent had eastern provinces as their origin or destination. As expected, the United States, followed by countries in Western Europe and in Asia, were the main markets for trade with Canada using air transport. For a regional breakdown of imports and exports, see Table A9-14 in the Addendum.

## PASSENGER TRANSPORTATION

### TRAFFIC

The events of September 11, 2001, had an enormous impact on air traffic levels, which decreased from a peak of 60 million passengers in 2000 to an estimated 55 million passengers in 2002. Transborder traffic was the most severely affected, with a 13 per cent decrease between 2000 and 2002. The international and domestic sectors fared slightly better, each having losses of close to 5 per cent over the two years. The situation has stabilized since September 2002 with results no longer showing year-over-year decreases; however, there are no signs that traffic is recovering to pre-September 2001 levels. Table 9-3 shows the continued decline in traffic since September 11, 2001.

For a summary of 2001 traffic for the 26 NAS airports, by sector and region, see Table A9-15 in the Addendum.



TABLE 9-3: AIR PASSENGER TRAFFIC, 1998 – 2002

(Thousands of passengers)				
	Domestic	Transborder	International	Total
Air Passengers				
1998	26,093	19,010	11,574	56,677
1999	26,645	19,644	12,271	58,560
2000	26,229	20,751	12,990	59,970
2001	25,921	19,371	13,043	58,335
2002	24,936	17,957	12,365	55,258
Annual Change				
(Per cent)				
1998 – 1999	2.1	3.3	6.0	3.3
1999 – 2000	(1.6)	5.6	5.9	2.4
2000 – 2001	(1.2)	(6.7)	0.4	(2.7)
2001 – 2002	(3.8)	(7.3)	(5.2)	(5.3)

Notes: Data estimated for 2002.  
 Passenger traffic is based on enplaned and deplaned passengers, but results for the domestic sector have been divided by two to avoid the double-counting of passengers.

Source: Statistics Canada

## SERVICES

Domestically, low-fare airlines continued to expand (see Table A9-16 in the Addendum for a list of new and discontinued domestic services). WestJet expanded into the east with the addition of services to London, Sault Ste. Marie and, most significantly, Toronto. Both Jetsgo and SkyService added regular service in transcontinental markets and to Atlantic Canada. Air Canada Tango began to serve several new destinations, including Fredericton, Quebec, Regina, Saint John, Saskatoon and Thunder Bay. Air North started jet service from Whitehorse to Calgary, Edmonton and Vancouver.

Air Canada's regional service commitments, made to the Minister of Transport when it acquired Canadian Airlines in December 1999, will expire on January 4, 2003. At that time, Air Canada will withdraw its service to St.-Leonard in New Brunswick, Stephenville in Newfoundland and Labrador and Yarmouth in Nova Scotia. It will also remove its code from flights serving High Level, Peace River and Rainbow Lake in Alberta, although service will continue to be provided by Central Mountain Air. Smaller carriers will be replacing services to both Yarmouth and Stephenville, although St.-Leonard will remain without a new carrier.

During 2002, service was withdrawn from points where Air Canada did not have regional service commitments: Campbell River, Comox, Dawson Creek and Lloydminster, as well as service linking Newfoundland and Labrador. All carriers are still required to provide 120 days notice of any discontinuance of service where there is no, or minimal, other service on the route in question. In such cases, they are also required to consult with the community in question.

In the transborder sector, there has been a tendency to add routes that cater more to leisure passengers than business passengers, as can be seen with the start-up of new services to sunspots such as Hawaii, Florida and the U.S. Southwest in the winter. Several airlines in Calgary, Montreal and Vancouver have also started summer-only services. For more details on both new and discontinued transborder services, see Table A9-17 in the Addendum.

As Table A9-18 in the Addendum shows, there have been fewer changes in the international markets. Air Canada has added new service to Amsterdam, Madrid, Dublin and Shannon. It also added Rome as a result of the revised Canada–Italy bilateral air services agreement. Air Canada discontinued its services to Argentina, Australia, Zurich, Taipei and Milan; however, it intends to re-enter the Zurich and Taipei markets in the summer of 2003. In terms of foreign carriers, Austrian Airlines, Alitalia and Mexicana each added flights to Canada, while services to Havana, San Salvador and San Jose by TACA/LACSA were discontinued.

## COMPETITION

Economic turbulence, high fuel prices and the effects of the September 11, 2001, terrorist attacks in the United States continued to be felt throughout the airline industry in 2002. Air carriers worldwide struggled to adjust to the changing market and to maintain their economic viability.

Domestically, there was considerable movement in capacity shares. Air Canada's domestic market share dropped from 78 per cent in December 2001 to 67 per cent in December 2002 despite the expansion of Tango flights and the introduction of Zip. WestJet continued to expand in the West, gaining close to a 50 per cent market share in that market and a 20 per cent market share on a national basis. It also introduced its first flights to Toronto, with service to Calgary, Edmonton and Vancouver. CanJet, which had previously been sold to Canada 3000 in 2001, resumed service in Atlantic and Central Canada in June 2002. Jetsgo Corporation, also entering the market in June 2002, made a competitive impact on routes across Canada. Carriers such as First Air and Air NorTerra grew in strength in the North, while SkyService expanded its domestic service, and Air Transat remained Canada's primary international charter carrier.

For more detailed information on domestic capacity share by airline and by region in December 2002, see tables A9-19 and A9-20 in the Addendum, and for the summarized results of the top 25 markets, see Table A9-21.



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